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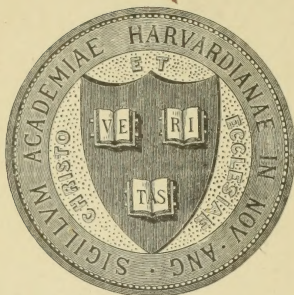


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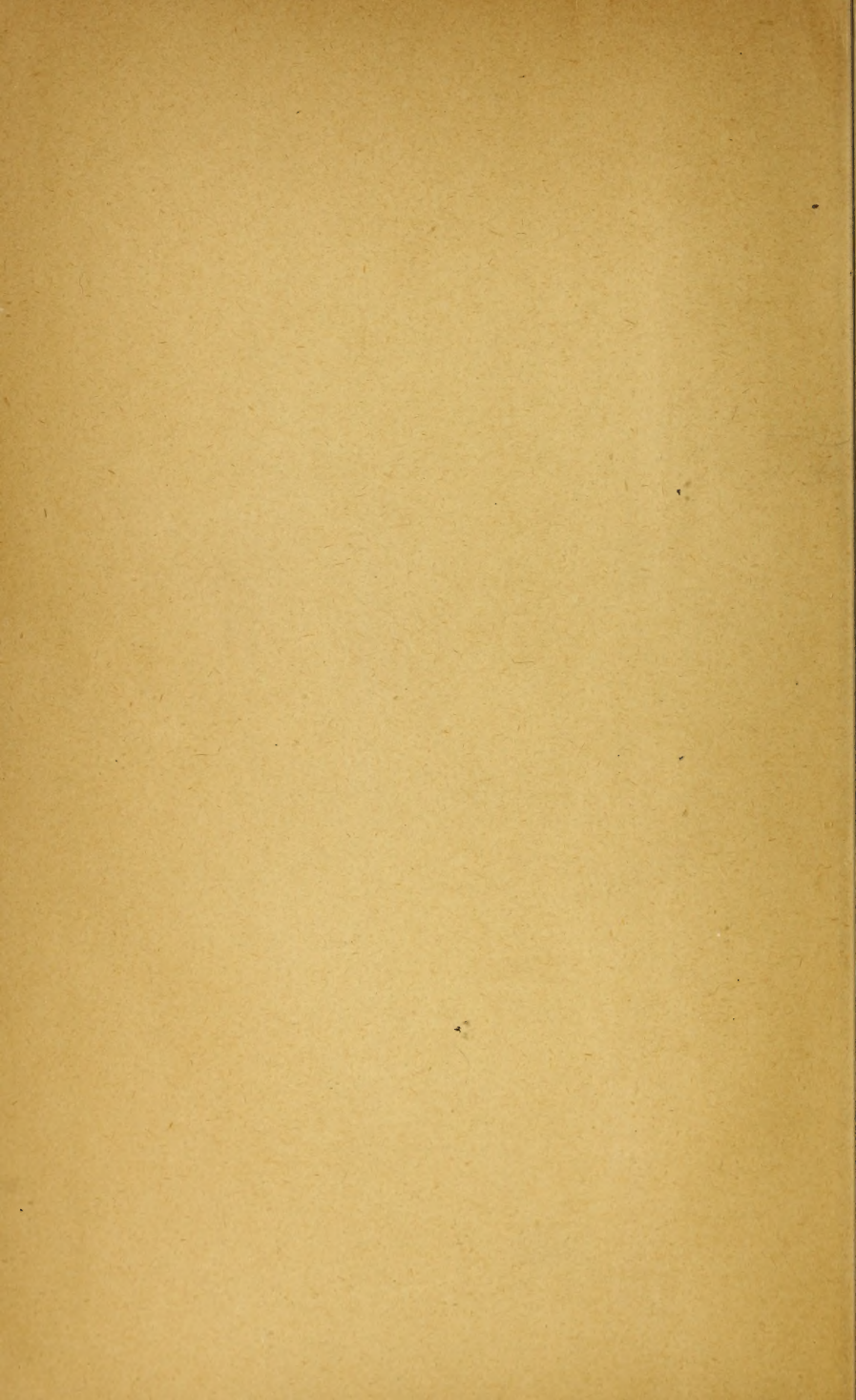
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JOURNAL

OF THE

ROYAL HORTICULTURAL SOCIETY.

VOL. XX. 1896.

PART I.

MELONS.

By Mr. JAMES BARKHAM, F.R.H.S.

[Read March 10, 1896.]

THE Melon (*Cucumis melo*), Natural Order *Cucurbitaceæ*, is an annual climber where its tendrils meet with support, trailing where this is not the case, and a native of the hottest parts of Asia, and probably also of Africa. It is said to have been carried from Armenia to Rome by Lucullus, and according to M. Jacquin, the Cantaloup varieties were originally brought from the same region by some missionaries to Cantaluppi, a villa belonging to the Pope, and situated a few miles from Rome. Afterwards they were introduced into France in 1495; thence they passed into Spain, and from that country into England. In Persia, Melons are exceedingly plentiful, and their cultivation in the open air in the plains of Ispahan and at Bokhara is considered unsurpassed. According to Downing, the climate of the Middle and Southern States of America is remarkably favourable to Melons; consequently they are raised as field crops by market gardeners, who sow the seeds in the open air early in May, and obtain ripe fruit in August. In our climate Melons cannot be successfully grown without artificial heat.

Hence we have to resort to such means as heated structures for producing early crops, such as properly constructed Melon

houses, or frames placed on prepared hot beds composed of fermenting materials such as leaves and stable manure ; although for later crops ordinary pits and frames may be utilised for their cultivation. In very favourable seasons, some of the more hardy varieties can be grown and ripened in the open air. In the summer of 1876 I ripened in the open air fruits of Munro's Little Heath weighing six pounds each ; also fruits of Golden Perfection, it being an exceptional season. Generally speaking, our seasons are far too short and uncertain for the successful cultivation of this fruit in the open. Of late years much has been written on Melons and their culture, and a number of first-class varieties have been raised in the Scarlet, Green and White fleshed sections.

And as the Melon takes an important position among the choicest of our dessert fruits, perhaps a few practical remarks on its cultural requirements would be acceptable to those, the uninitiated, by whom the question is so often asked, How can Melons be successfully grown ?

It is to such as these that need and ask for information that I shall endeavour to detail as briefly as possible my method of cultivation.

The following remarks apply to the cultivation of Melons generally :—

SOWING.—The seeds for the earliest crops should be sown early in January, using perfectly clean pots and crocks ; for this 3-inch pots are the most suitable size. Put a crock hollow side downwards over the hole, then a layer of small crocks ; on this place a little moss, which will insure perfect drainage, three parts filling the pots with a mixture consisting of three parts of fibrous loam, one of leaf-soil and sand. Place one seed to the depth of a half-inch in the centre of each pot. In making the hole for the reception of the seed a little silver-sand should be used to imbed the seed : this prevents decay, especially in the case of very early sown seeds. I prefer this method to sowing several seeds in a pot, as when the young plants require potting the roots get disturbed in the process, which often causes a check to the plants. The pots should be plunged in a bottom heat of 70 to 80 deg. As soon as the seedlings appear remove them to a shelf near the glass, so as to allow the young plants all the light possible ; shift into larger pots as the plants require more root

space, now using a stronger compost. The leaf-soil may be dispensed with, using a little manure from an old Mushroom bed. Those for planting in the houses should be allowed to grow without stopping, placing a neat stick to each plant as a support, and those plants intended for planting in pits and frames will require stopping at the second rough leaf, or rather the growing point should be taken out before a third leaf is developed. If sowings are made at intervals of ten days it will afford a supply of young plants for succession. We plant from January to July; the first date for planting will give fruit for cutting in May, and the latter date for cutting in October.

SOIL.—With regard to soil for Melons, I am convinced that without suitable soil good crops cannot be had, as Melons require a good substantial loam. The top spit from an old pasture is what I prefer if such is obtainable, soil such as a good strong yellow loam being most suitable. This should be broken up with the spade to about the size of a duck's egg. Do not use any manure, but to every cartload of loam add two barrowloads of old mortar or plaster, broken up and run through an inch mesh sieve, and one barrowload of half-decayed leaf soil, turning the whole two or three times so as to thoroughly mix it. Mistakes are often made in preparing soil for Melons by making it too rich by adding manure, which encourages a too luxuriant growth. When this is so it is an impossibility to obtain satisfactory results, as the growth becomes so succulent that instead of the fruit setting it turns yellow and decays.

PLANTING.—Whether preparing beds in the houses or pits a good quantity of Oak and Beech leaves and long stable manure should be prepared and put in to the depth of 2 or 3 feet, according to the depth of the beds or pits. On this should be placed fresh-cut turves 2 inches in thickness, the grass side downwards. On this the prepared compost is put from 10 inches to 1 foot in depth; it should be fairly dry, so as to allow its being made firm by treading, as a firm soil is conducive to a firm and short-jointed growth. Planting should not be done until the soil has become sufficiently warmed, which will be in a day or two. By this time its temperature will be nearly the same as that of the house or pit in which the plants are growing.

Planting on the ridge is to be preferred to planting on the flat, as it allows the water to pass away more readily from the stem

and base of the main shoots of the plants. These parts being somewhat elevated keeps them drier, and this being so wards off an attack of canker. This applies more especially to pit and frame culture, when the growths have to be trained over the surface of the beds.

I adopt the plan of placing pieces of tough fibrous loam or peat when planting and surfacing around the stem of the plants so as to encircle each plant: this prevents any superfluous moisture settling at the base or collar of the plants through watering and syringing during the season, which so often produces canker, thereby causing the death of the plant and loss of the crop. From 2 feet 6 inches to 3 feet apart is a good distance for house work, and for pits and frames one plant placed in the centre of each light will be sufficient, as this distance allows the plants to extend without the growth being crowded—a most important point to be considered.

REGULATING THE GROWTH.—Train the plants to a neat stake until the trellis is reached; rub off all growths as they show from the stem below the trellis; train the growths right and left and allow the leading stem to grow up without stopping to within a foot of the top. If the side shoots are likely to be crowded, pinch out some at first sight, as the Melon will not endure thinning so severely as the Cucumber; therefore the growths should be stopped and thinned early enough for those remaining to just cover the trellis with well-developed foliage and no more.

The first laterals which are formed at the bottom of the trellis should be stopped at the second or third leaf, and by the time the sub-laterals show fruit other fruits will be showing on the first laterals higher up. The plants, whether growing in houses or pits, should be gone over twice or three times a week for the purpose of stopping and removing any superfluous growth so as to allow of the principal leaves being fully exposed to the light. Stop at the first joint beyond the fruit and remove all weak growths and laterals not showing fruit.

Overcrowding is the greatest evil in Melon culture because the excessive foliage must be thinned, and its removal results in exudation from the wounds, gangrene sets in, and the affected parts perish through “wet-rot” (bacteria and bacillus growths). To arrest these, antiseptics must be used: the safest is quicklime, rubbing it well into the affected parts, and repeating as necessary.

But the worst effect of removing a large quantity of growth is giving a check to the fruit, not unfrequently causing it to cease swelling, and it becomes hard in the flesh; fungoid germs fasten upon the exudation, and the fruit decays when it should ripen. These disasters are generally preventible by attending to the thinning and stopping of the growths in time.

SETTING THE FRUIT.—The Melon is monœcious, that is, it bears male and female flowers on the same plant; the former are essential for the fertilisation of the latter, therefore a sufficient portion of them should be retained for that purpose. When the weather is fine and plenty of air can be given, the female blossoms usually become fertilised without artificial means being resorted to, but the process of setting the fruit, that is, fertilising the blossoms, is generally thought necessary. This operation should be performed when both male and female flowers are fully expanded, and consists in taking some of the pollen when it can be readily dusted from the anthers, and applying it by means of a camel-hair pencil to the stigma, or a male blossom may be stripped of its corolla and inverted over the female one; this should be done if possible when the weather is fine and bright—between the hours of eleven and two o'clock will be found the best time for this operation. Never commence fertilising the blooms until there is a sufficient number ready at one time, or within an interval of three days, to furnish the crop. If one or two fruits are allowed to swell off first, the later set fruit will not swell, but die away. Indeed, if only one fruit is set in advance of the rest, it will monopolise all the strength of the plant, and prevent any more fruit appearing. When a sufficient number of fruits are set, select the largest and best shaped, taking off all small and misshapen ones. If large fruits are wanted, leave from four to six fruits to each plant, or if smaller fruits are desired, allow eight or ten to remain.

WATERING.—Melons do not require much water until the fruit begins to swell, and then they must have liberal supplies. When the young fruits have attained to the size of pigeon's eggs, give the beds a good watering with liquid manure; repeat this once or twice a week according to the weather—in very hot and sunny weather the plants naturally require more moisture at their roots—also give the beds a good sprinkling of bone-meal; over this place a layer of fresh loam pressed down firmly.

Surface roots will now multiply freely, and if the hillocks are surface-dressed about every ten days with bone-meal and loam, it will keep the surface roots active, which will greatly assist in keeping the foliage fresh and green—a great point in Melon growing. I like the foliage to remain as fresh as possible until the last fruit is cut. In cases where the foliage decays prematurely, I have seen the fruits cut when not half matured and placed upon shelves, exposed to the sun to ripen, but the flavour has been poor and insipid.

SYRINGING.—Although syringing is supposed by some to cause the foliage to decay, I must say that I have never found it to act injuriously, but to have the desired effect of keeping the foliage clean and healthy; which is of vital importance, as without good, healthy foliage well-flavoured fruit cannot be obtained. During bright, warm weather the plants should be syringed twice and three times a day, for if the atmosphere of either houses, or pits, or frames is allowed to become arid, red spider will soon make its appearance, and when this formidable enemy once gains a footing, it is very difficult to entirely eradicate it, whole crops often being destroyed by its ravages. During periods of dull, sunless weather syringing should be discontinued, and the walls, paths, and other available surfaces may be damped down, which will insure the requisite degree of atmospheric moisture. Water should never be given direct from wells or the main, but should be used as nearly as possible of the same temperature as that in which the plants are growing; both for watering and syringing purposes, cold water is most injurious to the roots of the Melon.

TEMPERATURE.—For early crops fire-heat or fermenting materials are absolutely necessary. If a temperature of 55 to 60 deg. can be maintained at night, and from 65 to 70 deg. through the day, during January and February, it will be sufficient, increasing it as the season advances. Later on fire-heat may be dispensed with by economising the solar heat, but during damp, sunless weather a little fire-heat should be given to maintain a buoyant atmosphere. As the season advances admit as much air as can be given without causing a draught. It is a good plan to leave a little air on at night, and increasing it early in the mornings on fine days, when the temperature advances to 75 deg., and gradually increase it

with the rising heat, keeping it through the day at from 80 to 90 deg., and closing sufficiently early to rise to 95 or 100 deg. Before nightfall admit a little chink of air at the top of the house: this is very beneficial when the fruit is setting, to prevent the disposition of moisture on the fruit or blossoms through the night. When the fruit is ripening both front and top air should be constantly left on. Of course this will need regulating according to the weather. Before the fruits become too heavy they will need supporting, most growers having their own method of doing so. Some prefer using strips of bass, or wire netting; the nets made for this purpose make good supports, as they are not likely to mark or injure the fruits when swelling; being of a soft, elastic nature, they expand with the growing fruits. We use pieces of deal wood about four inches square, with a hole of one inch in diameter in the centre to allow the moisture to pass away from the crown of the fruit. As the fruit approaches the ripening period less moisture will be required both in the atmosphere and at the roots. Only sufficient water should be given to prevent the plants from flagging. At this stage also, when syringing must be discontinued, take about a half-pound of the flowers of sulphur and well stir it in a three-gallon can of water, using it to syringe the under sides of the foliage. I have found this to be an excellent prevention of red spider. The time for cutting is when the stem commences to part from the fruit, or when the aroma is first perceived. When cutting, if possible, leave a good length of stem to the fruit, as this adds greatly to its appearance. Any fruits, as they mature, that are not required for immediate use should be taken to the fruit room, placing them on patent wood wool or dried moss, where they will keep for a week or ten days.

INSECTS.—Black aphid and red spider are two destructive pests. Fumigating will destroy the former, and sulphur will check and destroy the latter.

CANKER is a disease dreaded by most cultivators of the Melon, and is very disastrous in its effects, often destroying the entire crop. Severe pruning and a too humid atmosphere, with a low temperature, is often the cause of this disease, although it is inherent in some varieties. Prompt measures should be taken on its first appearance to prevent its spreading. Apply fresh slaked lime to the parts affected, or powdered charcoal. I have

found the former remedy very effectual. In the case of plants growing in pits or frames great care should be taken in watering, and especially at closing time not to syringe too heavily, only just damping around the edges of the frames or walls of the pits. Increase the temperature by renewing the linings.

VARIETIES OF MELONS.—*Scarlet Flesh Varieties*.—Blenheim Orange, Triumph, A 1, Hamstead Park seedling, and Beauty of Sion, the last-named variety being excellent for pot culture. *Green Flesh*.—Monarch, La Favorite, Golden Perfection, and High Cross Hybrid. *White Flesh Varieties*.—Hero of Lockinge, Longleat Perfection, and Osmaston Manor Hybrid. Two good Melons for market purposes are Hero of Lockinge and Sutton's A 1.

SUMMER SALADINGS.

By Mr. W. IGGULDEN, F.R.H.S.

[Read March 24, 1896.]

WE are not a salad-eating nation, or, at any rate, we cannot compare ourselves in this respect with some of our Continental neighbours; we are, for instance, immeasurably behind the French both in our appreciation of saladings and also in our methods of culture. But, for all that, a good salad, composed of a few well-grown materials, and accompanied by a dressing not over-done with oil, never goes a-begging among us; and if it were more often forthcoming, it would tend to still further popularise saladings. It is during the summer months that salads are most appreciated, and when too, fortunately, there is, or ought to be, a wealth of suitable materials for making them within an easy reach of all. What these materials are, and how to produce them, is to form the subject of this lecture. They consist principally of Lettuce, Onion, Mustard and Cress, Cucumber, and Tomato; and Lettuce, forming as it does the basis of almost all good salads, must be spoken of first.

As far as the metropolitan and principal provincial markets are concerned we may safely assume that they are well supplied with good Lettuces all through the summer. So also are the majority of private places where professional gardeners are

employed. But the case is very different in our small country towns and with amateur gardeners, and even with the owners of the majority of small gardens. In these the supplies are fitful, and the quality after hot weather has set in for a few weeks decidedly inferior. There is probably an undesirable glut at one time, and no Lettuces worthy of the name for days and weeks later on.

In order to have a continuous supply of perfect Lettuces something more than ordinary or haphazard cultivation is required. Poor ground will not grow them satisfactorily at any time of the year. What they appear to stand most in need of is rich food, warmth, and moisture—at any rate if grown on the level—though, curiously enough, some of the very finest Lettuces are obtained from the flat-topped ridges between early-dug Celery trenches. In these positions they get no fresh manure, and moisture is none too plentiful; yet when once well established they thrive amazingly during quite the hottest weather. But if Lettuces succeed thus well on ridges they must have an abundance of solid manure when planted on the level. Market growers appreciate this fact, and act upon it to a greater extent than do the majority of private gardeners. A medium soil rather than a cold, retentive one best suits Lettuces, and they ought always to be grown in the full sunshine. The earlier sowings for early plants to grow on sheltered sunny borders should be made under glass early in March. If sown thickly in pans or boxes they ought to be first pricked out in other boxes or else in nursery beds, where they can be taken care of; but those raised more thinly in frames may be hardened off and planted out direct in April, where they are to grow to their full size. If the selection comprise quick-hearting Cabbage varieties, good hearts ought to be available from these early-raised plants in May or the early part of June, according to circumstances. The next sowing should be made on a warm border early in April in drills five inches apart, and the seedlings protected from slugs by means of occasional dustings of soot and lime. The plants thus obtained ought, in common with those earlier raised, to be planted out rather extensively, as they will heart in at a time when Lettuces are in universal demand, and when they will not run to seed so quickly as they do later in the season. Those left standing moderately thinly on the seed bed will be the first fit to cut, and

probably do good service. Yet another sowing may be made on a border three weeks later, and transplanting take place; but it should be remembered that Lettuces move badly in hot, dry weather.

The simplest and best plan, therefore, to pursue is to frequently sow seed (in one or more long or short rows, according to the requirements of the place) where the plants are to attain their full size. If this is done during April, May, and June, at intervals of about three weeks, and the plants duly thinned out, there is not much fear of Lettuces being scarce even during quite the hottest summers. Cos Lettuces may be grown in rows one foot apart and thinned to distances of from 6, 9, or 12 inches apart in the row, according to whether they are wanted small, medium-sized, or large. Cabbage varieties require rather less room. The rows of the compact growers may be 10 inches apart and 6 inches to 9 inches between the plants in the rows; while the Neapolitan types require nearly the same space as Cos varieties. Early Paris Market, Golden Queen, and Commodore Nutt are very quick growers, the first ready to cut, and are all of superior quality. All the Year Round and Perfect Gem give a good succession, the last named being particularly good in every respect. For hot weather the Neapolitan, Marvel and Continuity are reliable and good. The two last named have coloured outer leaves. Good selections of either Paris White or Paris Green Cos are suitable for summer culture, but in my estimation are both inferior to the old Black-seeded Brown Cos. Those who have not yet tried the latter as a summer Lettuce have a treat in store. Sown and planted with one or more Cos varieties, the Brown Cos will give a natural succession and be slower in running to seed. It sometimes requires to be tied up in order to have perfectly blanched hearts, but it well repays one for the trouble. The hearts are nearly white and crisp, and the flavour is the most delicate of all. It more nearly approaches the ideal than any other variety I know, and must have been known to the American who wrote: "Lettuce is like conversation—you scarcely notice the bitter in it. Lettuce, like most talkers, is, however, apt to run rapidly to seed. Blessed is that sort which comes to a head, and so remains, like a few people I know, growing more solid and satisfactory and tender at the same time, and whiter at the centre, and crisp in their maturity."

The Onion comes next on my limited list of salad vegetables, and I may perhaps be blamed for including it. Young Onions, however, are popular in some establishments, either for eating separately or for flavouring salads. For either purpose they must be young, and if more small Onions were forthcoming many more would be eaten, especially as they are said to be good for the blood. Of these, again, the American writer just alluded to makes some sprightly remarks, a few of which I shall venture to quote. This is what he says:—"I doubt not that all men and women love the Onion; but few confess their love. Affection for it is concealed. Some people have days on which they eat Onions, which you might call 'retreats.' The act is in the nature of a religious ceremony, an Eleusinian mystery; not a breath of it must get abroad. On that day they see no company; they deny the kiss of greeting to the dearest friend; they retire within themselves, and hold communion with one of the most pungent and penetrating manifestations of the moral vegetable world. Happy is said to be the family which can eat Onions together." I shall not attempt to combat the not unreasonable prejudice against the Onion, but will merely repeat that if more young Onions were grown more would be eaten, in spite of their admitted drawbacks. They ought to be used when from 6 inches to 9 inches in height, and preference should be given to white-skinned varieties. Sow a pinch of seed every fortnight or three weeks, from March to August inclusive, on rich ground, as they must be grown quickly.

Mustard and Cress, though popular enough, is not often seen good during the summer, and, in any case, I prefer it served separately as a morning salad to having it with other salad ingredients saturated with dressing. The reason why it is so often short, and none too free of grit, is because those who are responsible either use stale or too poor soil, or else they fail to shade heavily. Sow once a week all through the late spring and summer months on freely manured soil. Old Mushroom bed manure forked into the surface, rather than burying it deeply, answers well. Thick sowing on a fine, level, well-moistured surface is advisable, pressing in the seed, and covering the Mustard only, and that very lightly, with soil. Cover the beds with benders and mats until the Mustard and Cress is nearly 2 inches in height, and then gradually expose it to the light. Treated in

this way the stems will be long, crisp, and blanched, thereby adding not a little to the value of this small salading.

The Cucumber is, perhaps, the least wholesome of any kind of salad vegetables, no one, to my knowledge, venturing to ascribe any very good properties to it, at any rate as an article of diet. In spite of its doubtful reputation the Cucumber is very popular, few people accepting a certain doctor's advice, that Cucumbers ought to be skinned, sliced, salted, and then thrown on the rubbish heap. Fresh, quickly grown fruits only should be used, over-grown or stale ones not digesting properly.

A paper on saladings is scarcely the place to speak very fully or at length on the cultivation of Cucumbers; I shall therefore content myself with offering a few brief hints only. During the summer months Cucumbers can be most successfully grown in pits and frames, where they are less liable to be overrun with red spider and other insect pests than they are in forcing-houses. The old Rollisson's Telegraph would appear to be still one of the best for frame culture, but what now passes for Tender and True is more robust, and is a favourite variety with many growers. About the middle of April sow seeds singly in 3-inch pots, and place them to germinate in a warm frame or pit, rather than in a house where insect pests probably abound. At the same time some stable manure should be shaken out and thrown together into a heap to ferment with a view to getting rid of its rank heat and foul gases. Two or three turnings are needed, each time before the centre of heap attains a fierce or "white" heat. Dead leaves mixed with the manure will increase the bulk and serve to moderate the heat. A solid hotbed from 3 feet to 4 feet deep at the back with a gentle slope to the south is required, setting the frame on this and placing a layer of short manure inside. In the centre of each frame-light place about a bushel of light loamy soil, or a mixture of the best loam procurable, nearly fresh horse droppings, and "burn bake." Trial stakes ought to be kept plunged in the centre of the bed and drawn out, and the heat tested occasionally. If they can be comfortably borne in the hand the plants may be put out directly the heap of soil is well warmed through; but if the bed is violently hot, form a few deep holes in it, and let out vapour at the back of the frame, planting when the heat has sufficiently declined. Open out holes with the hand, laying a single plant in each heap in a sloping direction,

and then there will be less likelihood of snapping them when training. If not already done, stop the plants beyond the second rough leaf, and train the four resulting shoots two up and two down the bed, stopping these again at the fourth joint. In this way abundance of fruiting haulm will be obtained, none of which should be allowed to travel far before it is stopped, otherwise much haulm will have to be cut out occasionally which represents so much wasted energy. In the meantime more soil should have been placed in the front of the frame or pit, as the case may be, to warm through, in readiness for distributing lightly over the roots as these spread outwards and onwards, a thin layer eventually covering the whole of the bed. Never let the plants suffer for want of water, and never use cold water. Ventilate from the back, sparingly at first, never admitting rushes of cold air. Shade lightly from strong sunshine, removing it in the afternoon and gradually reducing the air, and closing after watering or freely syringing the plants in time for the temperature to run up to about 90°. Cover the frames with mats during cold nights and renew the heat in the bed by means of linings of prepared manure, this being especially needed during dull summers. The fruits must be kept cut closely whether wanted for use or not, as the leaving them on the plant after they are fully grown causes a needless strain.

Tomatos are a great improvement to a summer salad, though they are more often eaten by themselves with simple dressings only. They are at their best directly they are cut from the plants, losing acidity and richness of flavour according as they become soft and flabby. Red varieties are, as a rule, superior to yellow ones in point of flavour, but the latter add to the appearance of a salad, and the variety Blenheim Orange is of good quality too. House-grown Tomatos are generally to be preferred to those ripened in the open air, though when we have American summers the quality of the latter is by no means to be despised. In order to have ripe Tomatos in June strong plants ought to be ready for planting out or shifting into fruiting pots early in March, and it need hardly be added that a considerable amount of fire-heat will have to be expended over them. They will give early and heavy crops if trained up narrow span-roofed houses. A narrow ridge of good loamy soil will be sufficient for them, placing the plants 15 inches or rather

less apart in it. In wider, higher houses the heaviest weight of fruit is had by planting in deep borders, putting the plants 15 inches apart, in rows 3 feet apart, across the house, and training them up bamboos or strings until the roof is reached. Those who cannot devote a house wholly to Tomatos might yet grow a few in pots or boxes along the front of greenhouses, and placing them in their fruiting quarters early in May. Tomatos may also be successfully grown in newly planted vineries and in the lighter positions in older vineries. A temperature ranging from 55 deg. to 70 deg., accompanied by a chink of air when the nights are warm, and a good circulation of air whenever the outer temperature permits, suits Tomatos well. There must be no stewing or keeping them closely boxed up after the manner that suits Cucumbers so well, or heavy crops will fail to set, and disease will soon be rampant. Starvation, again, is a mistake. Feed those in pots and boxes liberally long before they give signs of wanting extra assistance, and let those which are planted out be also fed frequently and have a mulching of manure. Keep all superfluous side shoots closely pinched out, but do not greatly reduce the size of the primary leaves, as too much zeal in that direction has a most weakening effect, and also impairs the quality of the fruit. I ought perhaps to add that a perfect set of fruit can be most readily effected by smartly tapping the stems with a padded stick towards noon on dry days, or after the pollen has become dry enough to distribute. Tomatos can be had ripe on open-air plants in August. Plant early in June against sunny walls and fences or quite in the open, treating the plants much as advised in the case of those cultivated under glass.

Beet is not much in demand during the summer, but affords a good change to Tomatos. Tender, richly coloured roots can easily be had in June by sowing seed of the Crimson Ball or other form of Turnip-rooted Beet in heat, hardening them off and planting out on a warm border late in April or early in May. More seed of the same type should be sown any time during April.

As before hinted, a summer salad should be largely composed of well-grown Lettuce, with only just enough Onion and Tarragon leaves to give it a sprightly flavour. Some people prefer Cabbage Lettuce, as it is the tenderest, and it also absorbs the

oil or dressing to a greater extent than Cos Lettuce does. Others, again, prefer the Cos as being crisper, and occasionally a mixture of the two is used. Mustard and Cress I would not use in a summer salad, but either Tomatos, Cucumbers, or Beet (only one of them at a time), sliced and distributed on the surface or as a garnish. The materials, notably the Lettuces, cannot well be too fresh, and the best portion of them, that is to say the blanched heart, ought to be broken up coarsely in preference to using a knife or mincing it, as is sometimes done mistakenly; but keep out the stalks and tougher portions of the leaves. If a salad must be prepared some time before it is wanted for use, put it into the bowl, then pour in the dressing, so that this collects at the bottom, and not stirring it up until it is served. It should be kept cool and closely covered. Those who take extra pains with their salading dry the Lettuce by swinging it in a cloth before they place it into the bowl, and in not a few cases the dressing is sent to the table in a separate vessel to be used at the discretion of those caring for it.

For the benefit of those who like to make a good quantity of salad dressing at a time and store it for daily use I append one of the best recipes I have yet met with. Put into a basin the yolks of two raw eggs, add a teaspoonful of salt, and whisk well together. Then, by small quantities, a drop or two at a time, add one pint of the finest Florence or salad oil. Give plenty of time over this, as everything depends upon the thorough mixing and blending of the eggs with the oil. It can only be accomplished by very slow degrees. Next add one tablespoonful of nicely made mustard, one tablespoonful of Tarragon vinegar, the same quantity of elder vinegar, and three tablespoonfuls of the best ordinary vinegar; mix all well and add a small spoonful of caster-sugar, a little Cayenne pepper (which must be regulated by quality and taste), and a little salt, continuing to mix each ingredient with diligence and care. Then bottle for use, or use at once if required; but it improves by being kept a few days.

CULTURE OF THE PINE-APPLE.

By Mr. H. W. WARD, F.R.H.S.

[Read April 21, 1896.]

THE Pine-apple (*Ananas sativus*) is a native of the West Indies. It is grown extensively in Jamaica and the other islands, where the mean temperature of the year is about 80°, the mean of the hottest month being about 83°, and that of the coldest 77°. It also succeeds fairly well in Southern Florida and Southern California. It was introduced into England by way of Holland by a Mr. Bentinck as far back as 1690, and since then it has been cultivated with more or less success in the principal gardens in Great Britain and Ireland, no garden of any size being considered complete that does not include pineries among its forcing-houses.

In recent years, however, Pine-growing has been abandoned in not a few places on the ground of the expense incurred in the production of British Pines being excessive when compared with the price at which fine fruits of foreign growth can now be purchased of all the leading fruiterers all over the kingdom. But this idea of great expense being necessarily incurred in the production of British-grown Pines is more imaginary than real, and is not in accordance with facts based upon practical experience, inasmuch as the annual cost of production (after the initial expense) is comparatively small, so that, considering their quality, the value of British-grown Pines is far above that of any imported fruits, from which the bright colour, rich aroma, and fine flavour characteristic of all well-developed British Pines when ripe are almost invariably absent.

In order to secure the most satisfactory results of cultivation suitable accommodation must be provided for the growth of the plants, and a sound knowledge of their cultural requirements in all stages of growth must be possessed by the cultivator. If these two things are supplied Pine-growing is an easy and simple matter, involving less trouble and attention than any other kind of fruit grown under glass; and when once a small stock of plants is established, the number is easily and quickly increased.

Structures.—Low span-roofed houses running north and south are the best, with a raised bed about 12 feet wide down the middle, and a pathway a little more than 2 feet in width on either side. Each house should be provided with four rows of 4-inch pipes fixed on each side close to the front and end walls for top heat, four similar pipes being laid along the bottom of the central bed at about $2\frac{1}{2}$ feet from the side walls, the same distance separating pipe from pipe, which should be covered with brickbats. This will suffice to produce and maintain the necessary degree of heat in the material into which the pots containing the plants in their several stages of growth are to be plunged to the rims. Ventilation should be provided in roof and front-lights.

Houses thus constructed are suitable for the summer growth of fruiting and successional plants. But for the remaining nine months of the year, when artificial means have to be employed to produce and maintain the necessary degree of heat, the expense incurred in the consumption of fuel is in proportion to the area of glass exposed to external influences. So, on the whole, lean-to houses of the following dimensions are to be recommended:—For succession and fruiting plants I prefer lean-to houses, running east and west, about 9 feet high at the back and 4 feet high in front from the ground-line, with a raised bed, 10 feet wide, running along the middle of the house, and a pathway 3 feet wide at the back and 2 feet wide at the ends and front, the latter being 2 feet lower from the ground-line than the former, with three steps descending thereto at each end of the central bed, thus giving a space of 9 feet from floor to glass at back, and 6 feet in front, and a roof angle of about 34° . The surface of the bed should be about 3 feet from the roof-glass, and from $2\frac{1}{2}$ to 3 feet deep inside, a space of one foot being allowed for the bottom-heat pipes, and their covering of brickbats (broken somewhat small on the top), to allow of the heat percolating through the plunging material, the remaining space being reserved for tan or fermenting leaves for plunging the pots to the rim.

The length of individual houses should be governed by the number of plants which it is intended to grow and fruit each year, and this is simply a question of demand and supply. However, I may say, for the guidance of any who may feel disposed

to add a pinery to their existing ranges of glass structures, that a house of this kind, 120 feet long, in four compartments, three of 32 feet each for summer fruiters, succession plants, and suckers, and one (nearest the heating apparatus) of 24 feet for winter fruiters, would meet all ordinary requirements for Pines. It is an easy matter to double, treble, or quadruple the number of houses if necessary. The three first-mentioned divisions should be provided with four rows of 4-inch pipes, set at equal distances along the bottom of the central bed for supplying bottom-heat to the plants when plunged therein, and three rows of piping in front and two at the back for top-heat; adding two extra pipes, one in the front and one at the back, for extra top-heat in the house set apart for winter fruiters. The division set apart for suckers should be the farthest from the heating apparatus, and be 2 feet lower at the back and 1 in front than the three preceding compartments. It should also have a space ranging from 18 inches in front to 2 feet at the back between the surface of the bed and the roof-glass, in order to bring the suckers well up to the glass when plunged in the bed. There should be a screw-down valve in the flow-pipes in each of the four divisions of the house, and also in the flow-pipe at the point where it enters the bed in the first division, to enable the gardener to regulate the bottom-heat.

There are various kinds of thoroughly reliable heating apparatus to choose from nowadays, from the plain saddle, gold medal, Trentham, Cornish, Horizontal Monarch, Champion Horizontal Tubular, up to the celebrated Patent Duplex Upright Tubular Boiler, any one of which, of sufficient capacity for the piping attached thereto, will give more or less satisfaction if properly set and well stoked.

There can be no question in the minds of practical men as to the advantages which modern pineries have over the old-fashioned structures for growing and fruiting the plants in, although some of these are still doing fairly good service in different parts of the country. At the same time there is no doubt whatever but that men of equal ability in the culture of Pines, but one having old-fashioned pineries and the other houses such as I have described, are unequally matched, and the man who has the most approved appliances will produce the better Pines, simply as the result of superior accommodation.

In arranging the plants in old-fashioned Pine pits towards the end of July or early in August, fresh fermenting leaves (of the previous autumn's gathering), to the depth of 5 or 6 feet, are placed in the pit and trodden firmly together. The plants freshly potted in the pots in which they are to fruit are then plunged up to the rim, with their leaves within an inch or so of the glass. But long before the following April, when the plants generally have to be rearranged for the summer, owing to the decomposition and consequent subsiding of the leaves, the plants will have sunk perhaps as much as 3 feet from the glass. They must therefore be taken out, 3 feet deep of fresh leaves added to the bed, and the pots replunged in order to bring them up to the glass again; thereby subjecting the plants to a more or less unavoidable check whilst the work is in progress, not to mention the disadvantage resulting from their having been so far from the glass, and from the beneficial influence of ample light during the winter and early spring. In the case of modern pineries, all this is reversed, for when once the plants are placed into their fruiting pots and plunged into the bed of tan, there they remain until the fruit is cut, and instead of sinking away from the glass they get closer to it, if anything, making sturdy and robust growth in consequence.

A very important point in the successful culture of the Pine-apple (or, indeed, of anything else) is the obtaining of clean stocky young plants to begin with. Great care should therefore be exercised in procuring suckers only from perfectly clean, healthy, sturdily grown plants. These should have the jagged ends cut off, and a few of the short leaves which surround the base removed with the hand, so as to liberate the young brownish roots concealed beneath. In doing this, it is as well to place the suckers in separate lots, according to their respective sizes, in readiness for potting up forthwith.

A compost, consisting of sound fibrous sandy loam, which has been cut and stacked for twelve months, mixed with fresh soot, $\frac{1}{2}$ -inch bones, and fine charcoal, in the proportion of an 8-inch potful of each to an ordinary-sized wheelbarrowful of the loam, the whole being well mixed before being used, will prove congenial to the requirements of the plants in all stages of growth. The loam should be simply chopped down with a spade, and for use at this time of year (April) several barrows of

it should be stood in one of the hottest houses for twenty-four hours to get warmed through before being used. More especially is the observance of this precaution necessary in the case of potting established plants, as the bringing of their roots in contact with soil much colder than that in which they are growing gives them a serious check.

In potting the plants in every stage of their growth, it is absolutely essential that they should have good drainage and clean pots. This being so, potsherds to the depth of from 1 inch in 6-inch pots up to 2 or $2\frac{1}{2}$ inches in the case of the fruiting (10 to 12-inch) pots should be used, putting a large piece of crock, hollow-side down, over the hole or holes, and over this smaller pieces to the required depth, placing the smallest ones (those which have been passed through a $\frac{1}{2}$ -inch and $\frac{1}{4}$ -inch sieves) on the top, following these with a sprinkling of fresh soot (to prevent the ingress of worms) and a covering of thin turves, grass-side down, or dry moss, thereby securing perfect drainage.

The potting of the suckers, as well as of larger plants, should be proceeded with according to size, beginning with the largest and finishing with the smallest, the plunging of the pots being done in the same order, keeping the plants in all cases within 1 or 2 inches of the roof-glass, and allowing sufficient space between the individual plants to ensure *sturdy growth*. Pots from 6 to 8 inches in diameter and depth should be used for the strong rootless suckers, and the ends of these should be buried from 2 to 3 inches, making the soil firm about them with a wooden rammer, and allowing a space of rather more than half an inch from the rims of the pots for water when its application at the roots is considered needful. As soon as the roots begin to push freely into the soil, supplies of diluted liquid manure, at a temperature of about 85° , should be given at the roots up to the time the fruit begins to change colour; and occasional surface dressings of some good artificial manure, immediately before giving clear tepid water during the fruit-swelling period, will greatly assist in the development of large handsome fruit. Change of diet with plants, as with men, sharpens the appetite, and so promotes and maintains a healthy and vigorous constitution. The plants should not be allowed to become pot-bound before being placed in the fruiting pots. Those

put into 8-inch pots in the spring may, as a rule, be shifted into their fruiting pots the following August, the plants in 6-inch pots being given a shift one or two sizes larger, according to circumstances, loosening the soil round the balls a little with a pointed stick to liberate any roots that may have become matted, but in every case ramming the fresh soil firmly with flat and round rammers. After being potted, and plunged at from 1 foot to 2 feet apart, according to size, the plants should be shaded during the heat of the day for a fortnight or three weeks, and syringed slightly overhead and between the pots with tepid water before putting on the shading in the morning and after removing it in the afternoon, until signs of fresh growth are observed, when the shading may (except for two or three hours—say from eleven to two o'clock—in the hottest part of the day during very strong sunshine) be dispensed with, and instead a gradually increasing free circulation of fresh air should be admitted during the heat of the day, that is, from the time the thermometer registers 80° in the morning until it indicates 85° or 90° in the afternoon, say from half-past two in March up to four o'clock in June, July, and August, when the houses and pits should be closed, the plants dewed overhead, and the plunging material and house generally well damped over.

A bottom-heat of 85° should be aimed at during the first nine months of the year, but it may be allowed to drop 5° or 10° (except in the case of winter-fruiters) during October, November, and December. The plants should be kept uniformly moist at the roots during the same nine months; but water should be applied very sparingly in any form during October and the two following months—a time when the plants should be resting. The night temperature should range from 60° in October to 55° and 50° in November and December, with a rise of 5° by day with fire-heat, and 10° by sun-heat. The minimum temperature during the first nine months of the year should range from 65° to 70°. Winter-fruiters should, as a matter of course, be afforded a night temperature of 70° to 75° by day with fire-heat, and 80° to 85° with sun-heat, running it up to 90° at closing time when the sun is sufficiently powerful, and distributing moisture in the house at the same time. The plants, too, should be kept well supplied at the roots with stimulating fare in a liquid state at a temperature of 85°.

Each fruit should be secured to two sticks—one on each side—by two or three ties, the top ties being at an angle of about 35° from the top of the fruit, to prevent its upright growth being hampered.

In distributing moisture in the house, avoid letting water get into the crowns of the fruits, as this encourages the production of unduly large crowns, which detract from the size and general appearance of the fruit. On the other hand, should any of the crowns give promise of being under-sized—that is, not in proportion to the size of fruit, tepid water may be purposely applied to such crowns with a view to increasing their size.

The Queen Pine naturally produces suckers with great freedom; therefore in applying water at the roots of successional plants care should be taken to only pour the water over the soil; and not into the axils of the leaves, as this would unduly tend to the production of suckers. In the case of the Smooth-leaved Cayenne, Providence, and Charlotte Rothschild varieties, which are shy in producing suckers, there is no necessity for this precaution being observed. On the contrary, water may be poured into the axils of the leaves in watering as an inducement to the production of suckers. The latter should, however, be removed as soon as they appear from all successional plants, so as to concentrate all the energies of the individual plants into the building up of good fruiting specimens, potting up the suckers if necessary. Tepid liquid manure or weak guano water may with advantage be poured into the axils of the plants in watering fruiters, as the young roots coiled round the stems of the individual plants beneath the leaves will benefit thereby. When gills appear on the stems at the base of the fruit, they should be removed forthwith. Plants of the three last-named varieties should have their leaves trimmed back to the stems after the fruit is cut, and be kept in heat to produce suckers, affording water sparingly at the roots in the meantime.

The ripening of Pine-apples can be retarded, and the fruits kept nice and fresh for three weeks or a month, by removing the plants to a vinery, in which the grapes are ripe or ripening, as soon as the fruits begin to change colour, standing the pots on inverted ones, as a precaution against mice. In such a position I have frequently kept back Pine-apples for fully a month longer than could otherwise have been done. The fruits thus retarded

generally assume a brighter colour than those ripened in the pine-stove in the ordinary way, the drier and airier atmosphere maintained in the vinery at this particular time contributing to this result.

Varieties.—The best sterling varieties are The Queen, Smooth-leaved Cayenne, Charlotte Rothschild, Black Jamaica, Lady Beatrix Lambton, White Providence (a variety remarkable for the size of its fruit), Envile, and Prince Albert, and of these the first five are the best. Three years ago I received by post from a friend engaged in fruit-growing in the neighbourhood of Waldo, Florida, three small gill-like suckers of a variety called Porto Rico, which is said to yield fruit, averaging 8 lb., of good quality. I have succeeded in saving two of these plants, one of which I hope to fruit this year. It is strong, tall, and erect in growth. At Longford Castle I used to fruit twenty-three plants of Providence every year until I was unfortunate enough to get white scale through infested “crowns” from fruit received from another place having been unwittingly sent up to the gardens from the Castle, as was customary with “crowns” of our own Pine-apples. These, in blissful ignorance of the fact, were placed among our, until then, perfectly clean stock of plants, with the result stated, and having tried several supposed remedies quite unsuccessfully, I destroyed all the plants and made a fresh start with clean ones; but I have not been able to obtain any plants of Providence since then. I may remark that a fruit of the Providence Pine-apple, said to have weighed 14 lb., was sent to Her Majesty the Queen by the late Earl of Radnor many years ago.

Insects.—The Pine-apple is subject to the attacks of white and brown scale and mealy-bug. Therefore great care should be exercised not to introduce stove or greenhouse plants into the pine-stove. Pot-strawberries, French Beans, Melons, and Cucumbers may, however, be safely grown on any available space in hip-roofed pine-stoves.

Brown-scale may be got rid of without very much trouble, but mealy-bug (of which I have not had experience in any way during the last twenty-five years) and white-scale are most destructive and difficult pests to eradicate without at the same time destroying the plants in the process. My experience of white-scale on Pines is such as to lead me to strongly recommend any gardener who may be unfortunate enough to get it to obtain

clean suckers at once and make a fresh start, growing the plants in pits or houses by themselves away from the affected plants, and destroying the latter as soon as they have fruited. I am of opinion that whatever nostrum is applied strong enough to kill white-scale on Pines, as in the case of vines infested with *Phylloxera vastatrix*, will also prove fatal to the plants. In my case, I had the affected plants immersed in lime-wash at a temperature of 130°, hanging them up by the heels for six hours to drain and dry before being potted up, but without effecting a cure. Some weeks previous to dipping the plants in liquid-lime I had them dusted over while damp with a mixture of fine new soot and sulphur with a like absence of any good result.

ON THE SPECIES AND VARIETIES OF TULIPA.

By Mr. J. GILBERT BAKER, F.R.S., Keeper of the Herbarium, Kew.

[Read May 5, 1896.]

THE genus *Tulipa*, unlike its near neighbours *Lilium*, *Fritillaria*, and *Erythronium*, is entirely confined to the Old World, whilst *Calochortus* is confined to the New World. The Tulips which have been cultivated for a long time in gardens belong to a limited number of species, but within the last generation a great number of new species have been discovered, principally through the explorations of the Russians in Central Asia. There are at the present time not less than 100 specific names to be taken into account, and I propose here to briefly enumerate the groups into which the species are classified.

The first separate group is that of the true Tulips from *Orithyia*. Of the latter sub-genus eight species are now known, and as the flowers are small and not brightly coloured these are only worth cultivating as curiosities. They all come from Japan, China, and Siberia, and differ from the true Tulips in having the ovary narrowed into a distinct style, as in *Gagea*; whilst the true Tulips have stigmas sessile on the ovary.

The Tulips may be divided into two sections, according to

the absence or presence of the tuft of hairs at the base of the filament.

The section *Eriostemon*, of which *sylvestris* may be taken as the type, possesses this tuft of hairs; and the section *Leiostemon*, of which *Gesneriana* may be taken as the type, is without the tuft.

The *Leiostemeæ* may be separated into four groups as follows:—

I.—*Eriobulbæ*, which has woolly outer bulb-coats, comparatively broad leaves, and bright red flowers with a large patch of black at the base. The old well-known species of this group are *Oculis-solis*, *præcox*, and *montana*. Of this latter *chrysantha* and *Lehmanniana* are only yellow-flowered varieties. Little known species of this group are *maleolens* and *lanata*, the latter closely allied to *Oculis-solis* and lately discovered in Central Asia. *T. sogdiana*, Boiss, is a doubtful species, of which I have only seen a small and incomplete specimen.

II.—*Clusianæ*, which has woolly bulbs, narrow leaves, and glabrous stamens. Only two species are known, *Clusiana* and *stellata*, which perhaps may run one into another. *Stellata* is Himalayan, and *Clusiana* extends from Portugal to Persia.

III.—The *Gesnerianæ*, to which group the great mass of garden Tulips belong. This group is marked by its glabrous leaves and peduncle, and by the outer bulb-coats having only a few short adpressed hairs on the inner side. Of this group there are two sets of species, one with acute and the other with obtuse perianth-segments. The two best known garden species of this group are *Didieri*, a native of Savoy, of which *Billietiana* is a yellow-flowered variety, and *acuminata* or *cornuta*, the Turkish Tulips, with its very narrow, acuminate perianth-segments. Two fine new Central Asian species are allied to *Didieri*, viz. *Kolpakowskiana* (B. M. t. 6710) and *Kesselringii* (B. M. t. 6754) and *T. violaceæ* (B. M. t. 7440) lately introduced into cultivation from Southern Persia by Leichtlin. Less known species or garden forms allied to *Didieri* are *retroflexa*, *elegans*, *undulatifolia*, *Sintenesii*, *concinna*, *Dammanniana*, *Elwesii*, *cruciata*, *vitellina*, *viridiflora*, *ciliatula*, *brachystemon*, *triphylla*, *aristata*, and *oxypetala*. *Gesneriana* is distinguished from *Didieri* by its later flowering and by having its perianth-segments rounded at the apex. It is very variable, and has been

cultivated for so many years that it is impossible to decide with certainty which of its near allies are true species and which are mere garden forms. Amongst the allies of *Gesneriana* I may enumerate *macrospila*, *platystigma*, *Ostrowskiana* (B. M. t. 6865), *Maximowiczii*, *Batalini*, *Korolkowi*, *Schrenkii*, *Boissieri*, and *tetraphylla*.

IV.—The *Scabriscapæ* differ from the *Gesnerianæ* by their pubescent leaves and peduncles. The best known garden species of this group is *suaveolens*, to which belong many of our dwarf early-flowering forms with glaucous hairy leaves. *T. pubescens* comes midway in character between *pubescens* and *Gesneriana*, and is probably a garden hybrid. Many garden forms fall under *pubescens*, such as the Brides of Haarlem and the Duke of York, of taller habit and less acute segments than *suaveolens*. Other species of this group are *strangulata*, *bœtica*, *Kolpakowskiana* (B. M. t. 6887), *altaica*, *maculata*, *Eichleri*, *Alberti*, and *Greigi* (B. M. t. 6177). The last named of these has bright, orange-scarlet flowers and distinctly spotted leaves, and is the finest of the new Russian discoveries.

Of the true Tulips with hairy stamens there are two groups, one with red or lilac and the other with yellow flowers.

To the first group belong *Haageri*, *Sprengeri*, *saxatilis*, *bithynica*, *pulchella*, *polychroma*, *violacea*, and *Aucheri*, and to the latter *sylvestris* and its very numerous allies, some of which have the flowers tinged with green and the others with red on the back. I have not mentioned all the published species. My main object has been to indicate what are the principal characters of the seven groups under which they may be arranged.

A SHORT PAPER ON IRIS.

IN CONNECTION WITH THE EXHIBITION OF A LARGE NUMBER
OF PAINTINGS OF THE GENUS. MAY 5, 1896.

[By W. J. CAPARN.]

WE all know the Iris as an historical flower under its name of Fleur de Lis, Fleur de Luce, perhaps flower of Louis. Louis VII. of France adopted it as the emblem of his shield during the

Crusades, and strewed it on the mantle of his son when consecrated at Rheims.

After the battle of Crecy it was united with the arms of England, and remained so until, on the union with Ireland, the shamrock took its place. But from the earliest times it was the symbol of power in Eastern countries. A fleur de lys, exactly like that of the emblem of the French Monarchy, was found surmounting a sceptre on a monument of the highest antiquity at Dendera in the heart of Egypt. Herodotus and Strabo relate that the kings of Babylon formerly bore it at the extremity of their sceptres. Montfaucon also speaks of that of David found in the miniature of a tenth-century manuscript which is surmounted by an Iris. It was placed on the brow of the Sphinx, and the ancients regarded it as the emblem of eloquence.

A glance at the geographical distribution of the species of Iris will, I think, assure us of their adaptability to our climate and our gardens.

There is, I believe, no meridian of longitude in the land of our northern temperate zone untenanted by Iris in one, at least, of its many forms and species. In latitude the greatest abundance appears towards the warm temperate region of 40°, whilst they rapidly thin out below 30° or beyond 60°. This gives us the knowledge that the majority of Irises are hardy plants. I am not sure that I could find half-a-dozen that are not perfectly hardy as far as our cold is concerned; and with the exception of some of the Asiatic section, notably the *Oncocyclus* group, which inhabit a peculiar climate of extremes to which they seem especially adapted, and without which they cannot go through life, they are, on the whole, very reliable plants to grow.

Starting from England, we have two native species, *Pseudacorus* and *foetidissima*, both of which spread right across the continent as far as Afghanistan and Northern India, in fact seem happy anywhere or, as they say in catalogues, "will grow under trees." In France and towards its southern coasts we find at least ten species. Portugal and Spain soon add to the list with bulbous ones. The drier and warmer the soil in summer the greater need for the bulb form of plant. Morocco, Algeria, and Northern Africa add more bulbous ones, to which summer roasting, sun, and light are essentials of culture; but they thin off

to a couple of varieties of *I. alata* in the Atlas Mountains and *I. diversifolia* in Abyssinia.

As this bulbous group goes eastward, its character of fibrous, annual, dying-away roots changes more into the thick, fleshy, persistent, nourishing roots of the Juno section. Towards Syria, Palestine, and Asia Minor begins the *reticulata* group with netted, handsome bulbs and quaint, strange flowers.

Again, starting from Spain along the northern shores of the Mediterranean, France, Riviera, Switzerland, Tyrol, Italy, Austria, Hungary, Turkey, and Greece, we find a race of dwarf spring flowering Iris mostly mountainous plants, of whose great garden value I will speak later on. Germany, the Black Forest, Austria, Hungary, South Russia, Turkey, and Turkey in Asia give us the tall summer flowering species, many of whose hybrids and varieties are to be seen in English gardens, but by no means too plentifully. The largest development of these seems to culminate in Asia Minor, which has furnished those enormous flowers of Germanica, Amas, Sivas, Orientalis, and Kharput or Asiaticus. In Asia Minor these give way to the very curious, beautiful, and extraordinary types of the Oncocyclus, many of which, thanks to Dr. Foster's and the Rev. H. Ewbanks' success with them, and personal kindness, I have been able to represent, though as yet I cannot say that they like my care in the garden. Together with these Irises that I have mentioned is a race, more numerous perhaps in the northern part of our zone, characterised by narrow long leaves, narrow segmented long flowers, wiry and not fleshy roots, and without that particular character of a beard which we shall come to speak of afterwards. These, I say, are thinly scattered towards our side of the hemisphere, but they increase greatly in number as we go eastward through Russia, Siberia, China, and Japan, and reach their greatest development in America, a country in which the other or old-world forms, of which we have hitherto spoken, are scarcely, if at all, represented. Throughout the southern temperate zone there are other genera of bulbous and rhizomatous plants which have often somewhat similar flowers, and which may be called Irids, as Gladiolus, Moræa, Dietes, Ixia, but amongst which no true Iris is to be found. Thus we see that Iris is an entirely northern genus of temperate limits.

Mr. J. G. Baker, in his admirable text-book, the 'Monograph

of Iris," published first, I believe, in the *Gardener's Chronicle* during 1876, but since revised and enlarged, gives, as a suitable method of distinguishing the various groups into which Iris falls, the varying characters of that very conspicuous raised line running along the middle of the outer or drooping petal-fall of the flower. In the two groups of bulbous and "beardless" this line is a raised or convex ridge. In two other groups there is a more or less thick line of hair-like bristles, coloured to attract attention, and making believe that it is covered with pollen. In a fifth, the *Oncocyclus* group, the ridge of hair is spread out as a broad, flat cushion. Joining in with this are one or two which have hairs ridged upon both falls and standards, outer and inner petals respectively. A sixth section has the line produced into a crest or comb, cut and frilled very much in the same manner as a cock's. In each and all of these groups there are slight exceptions, as you might expect, which serve, perhaps, to unite the whole. Bulbous Iris, for instance, as Dr. Foster's work* upon this branch of the subject shows us, develops a crest in one or two species in the South Caspian region; in one species, that of *Iris Boissieri* in Spain, it develops hair; and, lastly, in *I. nepalensis*, its bulb is reduced to a resting bud. This has also a branched inflorescence, which connects it in a manner to the beardless rhizomed species. The beardless again makes a change in *I. hexagona*, which is furred as though connecting with the true bearded. The bearded Irises again connect with *Oncocyclus* in *lupina*, which has the hairs collected to a ridge, but its inner petals have scattered hairs towards the base, as in other members of that section. A tendency to the same is observable in *germanica*, *pallida*, and other tall bearded Iris.

The real use in all these varying developments of this, one might almost say, organ is apparently to make an insect step high upon entering the flower (although I have observed small flies feeding apparently in a persistent manner upon some possible exudation at the base), so that its back shall perforce rub against the just pouted lip of the overhanging stigma, and so deposit any pollen it might have previously collected upon it before entrance into the flower itself. In my own garden, when I first grew Iris, no humble-bee in my locality could understand the flower at all, and after climbing all over the

* See Advertisement pages.

outside for a minute together, it would fly away in dudgeon, and, having failed to find any good in such an object, would never again waste time upon it. This I found very advantageous, for I could always count upon the fact that an Iris would never set seed with me unless I fertilised it myself; but I grow many Iris now, and the Bombi who now resort to my garden have very greatly increased in numbers and species, and, what is more, have learnt the lesson perfectly. So that Iris now seeds freely, and especial care has to be observed with fertilised flowers to prevent insects undoing my work of hybridising.

To return. In Bearded Iris there are two very distinct and well-defined groups, one having solitary or few flowers to a stem, which is short, so that the whole plant in flower is seldom more than one foot in height in the largest of this section. The flowers in nearly every case are large for the size of the plant, and, alas! fugitive. The majority of Iris blooms have a three days' span of existence. Some few bulbous and early spring and summer flowering ones have six days', and one species, *I. sisyrinchium*, a real gem, the oldest Iris, as far as is known or surmised, and the one with greatest geographical range, blooms from mid-day to three o'clock, when, worn out with old age, and perhaps effort in beauty, it curls and dies. Of course other individuals keep up the show, and especially when there are, as in most species, many buds to a stem, for as long a season as the majority of other plants, but you never will have Iris flowers to tire of; it is a pageant that is always changing.

Members of this dwarf group of Iris are always spring bloomers, that is to say, they begin in March, with the little *pumila*, or one of its varieties, a plant two inches high at flowering time, and covered—so covered that nothing but a blaze of colour is to be seen, no leaves or plant—with blossoms of red purple in the type, pale blue, white, indigo, and yellow; and as these charming little spring varieties have every year a neck-and-neck race for earliness, sometimes one, sometimes another coming in first, they must *all* be grown for an early show of bloom in March or April. Following upon these are *virescens*, a vigorous garden plant which has given me excellent results; *Chamæiris*, *biflora*, *Statella*, *olbiensis*, *italica*, *Fieberi*, and, in fact, the whole race of these dwarf-bearded ones. They

give such a profusion of flowers, and light up the garden with masses of bloom, in a way one cannot describe. They like a very sunny spot, a bank for choice ; soil not very particular, but perhaps light ; and for climate, a wet spring with no frosts, a hot, dry summer, the hotter the better, and a hard, dry winter. I have, by way of experiment, taken up a number, and kept them exposed to air in a covered shed from November to February, no soil whatever about them, and they flourished after it as though they liked it. This is not their culture, observe ; it is simply an illustration of dry winter. But when they are happy they grow in such a cumulative way that, being hungry plants, they must be taken up and divided, and given fresh soil every three or four years, their chief enemies being autumn and winter wet, woodlice, which burrow under the rhizomes and eat the growing points of the new roots, and snails, which are very fond of the flowers. In raising hybrids in this section my aim has been (1) to extend the range of colour, (2) to add to the number of flowers on a stem, (3) to extend the season of blooming and make it continuous. The size of flower I place last.

The other beardless group is very different in manner of growth, as well as in inflorescence, and time of blooming, being of much larger stature and distinctly summer blooming, commencing the latter half of May, through June, and ending in July. These are for the most part comprised in half-a-dozen species, of which *Germanica* is the earliest, and blooms in end of May and early June. Well known by the typical Blue Flag of gardens, it has several varieties, the greatest flowers and most remarkably vivid colours being found in those forms which come from Asia Minor.

Following these are the half-dozen marked species—*pallida*, *squalens*, *variegata*, *amœna*, *sambucina*, *neglecta*—marked always by manner of inflorescence, character of spathe valves, the green or, in *pallida*, paperlike envelope to the unopened flower bud. The width of leaf is great and colour glaucous in *Pallida*, ribbed and green in *Amœna* and *neglecta*, strongly tinged with purple at base in *Variegata*, which is the smallest and latest plant of this group ; and under one or other of these heads chiefly are to be found the numerous beautiful varieties that go to make garden Irises so beautiful. They have wonderful developments of colour harmonies—a greater range perhaps than

any other flower—the texture of their petals and the variety of surface in the same petal make up a picture that I believe one must have a few failures in trying to represent before properly appreciating. One sees sometimes a mass of rhizomes and but few blooms in gardens, but that is not the fault of the plant, in all Iris the blooming point, and making of seed after it, is the end of life for that individual, be it rhizome or bulb, and no plant of them will flower again unless a reserve of strength has been built up for the support of a previously developed progeny. In bulbous Xiphions often several, in rhizomes at least two, capable of separate existence are produced, one on each side of the parent which is soon to terminate existence. To make the plant flower each full-grown rhizome must be matured and ripened by exposure to direct sunshine; this means no overcrowding, and I fear that from its power of being able to exist, even under trees, it has often been ruthlessly planted there, to lead a spoilt life, for it is essentially a child of the sun, and that has something to answer for in the want of popularity in Iris as a flower.

With the next group, the *Oncocyclus*, we find that sun is such an all-powerful factor that any trifling neglect on our part to get, store, preserve, or imitate the effects of his Asiatic rays quickly ends in collapse and direful loss. When we get their rhizomes they are not very much to look upon, but if we are not careful they will be very much less before long, though from the prices which now obtain for them we see that this very wild child of the desert *is* being made to perform in some gardens. April and May, with those happy people who can grow the *Oncocyclus* group of Iris, is the cream of the whole flower year. The plants all seem to live within a certain radius of the Caspian Sea, and develop most in number around what is sometimes called the Cradle of the World. A glance at the table of distribution at once shows us the jump in number of species, not only of *Oncocyclus*, but of others, that takes place in Persia, Mesopotamia, Armenia, Syria, &c. When we look at the flowers themselves of these species and see that here of all places are congregated the most refined, perfect in form and colour, of all this great family of plants (their colours are not by any means so gay as their neighbours on either hand), we can well realise that when those early potentates gave the flower the place of

honour upon their sceptres, they did it rightly and with good sense of appreciation, and in a country where there was no lack of material to compare with in other flowers.

There is still remaining the small group of Crested Iris, of about half-a-dozen species, the largest of which, *I. tectorum*, *Milesii*, and *japonica*, or *fimbriata*, may be to the majority of us considered greenhouse plants, will not stand hard frost, and like their own treatment. *I. tectorum*, which is planted on the top of thatch in Chinese houses, requires a wet spring growing time, a hot summer, and a quite dry winter under glass. *I. japonica* requires wet or damp perhaps all the year through, also under glass for success. Such, at least, is my experience.

I. cristata and *I. lacustris* are charming dwarf plants, the first from the hills of Kentucky and Carolina, the second from the shores of Lake Huron. Finally there is the group of Beardless Iris, having, as we saw before, the most extensive range of any. Though limited in number of species it has great variety in form and size of plant and flower, from the quite dwarf *I. ruthenica* and curious *I. humilis* to the *Ochroleuca gigantea*, six feet high, and, needless to say, treatment varies with them. A light and well-drained soil suits some species—notably the smaller ones—while the taller ones require a strong soil, with here and there the chance of getting their feet in water, as in the case of *Iris Kämpferi*, which the Japanese have done so much with from *I. lavigata* as a garden flower.

Irises are, I believe, on the whole averse to manure, but like rich soil, with frequent division and replanting, that is, every three or four years: this gives their rhizomes full chance for sturdy growth and maturation. The moving, too, is best done, at any rate for all beardless Irises, immediately after flowering, as the plant then begins to send out its new roots, which build up the flower of the next year, and if these roots then go down to their right soil, there is no fear of check at transplanting or loss of time in getting established.

THE MOVEMENTS OF PLANTS.

BY REV. GEORGE HENSLOW, M.A., F.L.S., &c.

[Delivered June 9, 1896.]

INTRODUCTION.—The old distinction between animals and plants, that the former could move and the latter could not, was based on very limited observations. For, not only have very many of the lower forms of vegetable life motile reproductive bodies, as the zoospores of the Potato fungus and Algæ, but even all the higher plants can move their various organs, though they be rooted in the ground. The object of the lecture was to illustrate this fact by a small selection of characteristic examples.

Motions of plant-organs can be either the result of and during growth, as in the development of leaves during the expansion of leaf-buds; or the result of certain irritations taking place periodically or otherwise, after the organ is completely formed, as in the foliar sleep of plants, in flower-stalks, &c. Excepting the bursting of capsules and other cases, where usually life is extinct, the motions are due to the inherent properties of living protoplasm.

GEOTROPISM AND CIRCUMNUTATION.—The first evidence of germination in seeds is seen in the protrusion of the radicles, and in all ordinary dicotyledons growing in the soil the apex elongates and forms the tap-root which grows downwards, *i.e.* in the direction of the action of gravity, this being the exterior exciting force. Darwin found that the tip of the radicle of a cabbage seed was only acted upon by gravity upon its “growing point,” *i.e.* for a length of from $\cdot 02$ to $\cdot 03$ inch; but the influence can be *conducted* to some higher point where the bending may take place. The property of an organ growing or bending under the influence of gravity is called “Geotropism,” or “turning earthwards.” When the cotyledons appear above the soil by the growth and elongation of the radicle (the plumule being for a time arrested), the radicle now takes the name of “hypocotyl,” being “below the cotyledons.” If the radicle be arrested while the plumule begins at once to grow, as in the bean, the plumule is now called the “epicotyl,” as it is “above the cotyledons.”

In either case the young stem issues from the seed-coat more or less in the form of an arch.

The radicle soon begins to "circumnutate," *i.e.* "bows around," causing the tip of the root to move more or less in a circular manner, enabling it to find a point of least resistance. The apex of the root would seem to continue to grow with a circular motion, as far as possible, beneath the soil, as is indicated by the spirally-twisted condition which sometimes obtains between two roots in close approximation.

As long as the arching stem is below the soil this motion aids the ascent by freeing it from the pressure of the earth. As soon as it is free the concave side grows more rapidly than the convex, so that it soon becomes straight.

HYDROTROPISM.—This term, signifying "turning waterwards," is given to roots, &c., which are influenced by the presence of moisture, and are thereby induced to grow in the direction of it. An experiment of Sachs' of growing beans, &c., in a sieve full of damp materials, through the meshes of which the roots protruded at first vertically, but then applied themselves to the wet surface of the sieve again, proves that water more powerfully influences the tips than does gravity. It is due to this property that roots of trees have been known to grow to great lengths to reach a distant water supply, the vapour coming from the source having apparently induced the root to grow in the direction of it.

PHOTOTROPISM AND HELIOTROPISM.—Turning "lightwards" and "turning sunwards" are the terms indicating the well-known property of plants being "drawn to a source of light." The first term applies to the growth of stems upwards towards the general illumination of the sky; the second term to every case when an organ is illuminated more in one direction than another. The first is probably the original cause of the erect growth of stems; for an experiment made by Mohl* of growing plants in a box on a perforated shelf and illuminated solely from below showed that they now grew vertically downwards. Erect growth is generally attributed to "negative geotropism," or "apo-geotropism,"† as being in the opposite direction to the action of gravity; but there

* *The Vegetable Cell*, p. 146.

† It must be remembered that these and other like terms only express *observed facts*, but in no way account for them.

is no such force-action from above (other than light), as gravity acts from below.*

REPULSION BY OBSTRUCTION.—According to Darwin, the tip of a root will try to turn away from an obstruction. He showed this by fastening a piece of card to one side of root-tip, as well as by other methods. This gave rise to a good deal of criticism, the idea of his critics being that the motion was a result of injury to the delicate tip. The root, however, is deflected *away* from the obstruction, so that it looks as if the irritation causes a greater growth to take place on *the same side* as the obstruction. If so, this would imply an increased vigour at the spot. Moreover, this would be quite in keeping with what takes place in climbing stems, &c., that as soon as pressure is exerted at any point the tissues begin to thicken in response to it. The enormous power which roots acquire to overcome obstructions, as, *e.g.*, when growing under a wall, is probably the result of the effort induced by the obstruction itself, which causes it to develop tissues in response to the pressure.

If, therefore, Darwin's peas had been able to have a fulcrum, instead of growing in air, results perhaps might have been different; but this suggestion requires experimental verification.

CLIMBING PLANTS.—These supply an abundance of illustrations of motion. The climbing property of stem-twiners is the result of their circumnutation, perhaps coupled with some slight degree of sensitiveness to contact. In the greenless stem of the parasitical dodder both properties are in evidence, and some branches, as of *Strychnos*, are known to be modified like tendrils,† which both circumnutate and are sensitive; but it is not certain whether the latter property is possessed by ordinary green-stemmed twiners. Circumnutation is well seen in long slender-stemmed plants as the hop. The motion appears to be the result of a combination of forces. First, there is, or believed to be, the spiral growth of the stem itself, so that the apex is, so to say, being continually pushed over to the opposite side by growth at one point at a time; as the successive points of growth are supposed to take place in order round the stem, the ultimate result

* I would refer the reader, for a further discussion of this subject, to my *Origin of Plant Structures*, p. 197 *seqq.*

† See a paper by F. Müller, *Journ. Linn. Soc.*, ix. p. 344.

is a continual "bowing around" of the apex.* At the same time gravity is always trying to pull the tip to the ground. This in turn tries to stiffen itself by putting on tissues of wood in opposition to the strain. Then, if the plant happen to be unequally illuminated, there will be another "pull" in the direction of the stronger source of light. The result is that the shoot moves in irregular ovals, zigzags, &c.

As a leaf-climber, *Solanum jasminoides* may be taken. Darwin tells us that a long shoot made four revolutions against the sun at an average rate of 3 hrs. 26 mins. In a hothouse a stick was clasped by a petiole in seven hours. After three or four days the petiole increased much in thickness, the three isolated fibro-vascular cords becoming united and forming a cylinder like that in a stem. This increase is due to response to the strain felt. An analogous but not identical growth is seen in a horse-chestnut petiole; for in this there is a complete cylinder of wood, but the three cords, usually only occurring in petioles, are embedded in the middle of the pith. In all cases the extra growth of wood indicates the amount of strain to be met by the petiole.

GLORIOSA.—This plant has a stem which describes an irregular oval in about three hours. The leaves are horizontal, the end of each forming a slender hook-like extension. If it catch anything, it at once anchors the plant, which is somewhat over-weighted above, and stops the circumnutation. The inner surface of the hook is sensitive, so that in from one to three hours it curls inwards and permanently seizes an object in from eight to ten hours. If it does not catch anything, after a time the tip curls up into a helix and loses its sensibility.

TENDRILS are the results of modifications of more than one kind of organ. They are generally metamorphosed leaflets; but in vines and *Ampelopsis* they are homologous with flowering branches. *Strychnos* may have its branches in the form of tendrils; while *Dissochæta* has adventitious roots similarly metamorphosed. Circumnutation coupled with a sensitiveness to contact are the usual means by which these organs effect their purpose.

VERNATION.—This term is given to the way the young leaves

* If a hazel shoot be split vertically, the surfaces are never flat, but show a twist.

are packed up within the bud. As the buds open and the leaves begin to grow, they endeavour to secure two objects, viz. to protect their upper surfaces and to grow in as perpendicular direction as possible. The advantage derived from this position is to reduce or counteract the ill effects of a chill by radiation, which is much greater from a horizontal surface than a vertical one. The leaves and leaflets are generally conduplicate, *i.e.* folded together, with their upper surfaces inwards. This results from the lower surface growing faster than the upper in the earliest stages of development; so that the two upper halves of a leaf are pressed together. The vertical position is acquired by one side of the petiole growing faster than the other; so that half-developed leaves are either erect or dependent. Subsequently the rates of growth are reversed, so that the leaf assumes its final and horizontal position with the upper surfaces most exposed, more or less at right angles, to the light.

SLEEP.—The positions assumed by growth in young leaves are analogous to those which are sensitive to varying degrees of intensity in the solar radiations. In Clover, *e.g.*, the three leaflets are conduplicate, and they are all compressed together in the immature stage and hang down vertically; but when mature and “going to sleep” at sunset the two lateral leaflets rotate till they are vertical. They then approach each other and press their upper surfaces together, while the terminal leaflet passes through half a circle and comes down over their upturned edges like a roof.

THAUMOTROPISM.—If the soil be warmer than the air just above it, plants will often grow with their stems and branches prostrate upon the ground, and so become creeping plants. Thus the common Mallow is usually erect when surrounded by other plants; but in the barren, rocky soil of Malta it is quite prostrate, creeping over the ground to considerable distances by road-sides. Similarly, plants with a rosette of leaves as Plantains and Daisies on lawns, Blue-bells in early spring, &c., have their foliage flat upon the ground from a similar cause, “turning heatwards.” The same peculiarity is particularly common in dry Alpine regions.*

MOVEMENTS OF FLORAL ORGANS.—These are very numerous, and may occur in the flower-stalks or among the floral organs,

* See *Origin of Plant Structures*, p. 104.

&c. Thus in *Silene nutans* the petals unfold and curl up, re-opening again as night approaches. It thus renders the flower visible to nocturnal visitors, as moths. In some leguminous plants, as *Genistas*, the corollas "explode." This is due to the claws of the petals being in a high state of tension when the flower is just ready to expand. Others, as in the *Medicagos*, the staminal tube is irritable, and causes the flowers to burst open in an analogous but not identically the same way. In *Berberis* and *Helianthemum vulgare*, the rock Rose, the stamens are highly irritable to a touch, approaching the pistil in the former, but receding from it in the latter case. In the Musk and allied plants the two flap-like stigmas move together if touched, while in *Stylidium* the style swings violently from one side of the flower to the other if it be irritated at the base.

Complicated movements occur in the fruiting stages of *Trifolium subterraneum*, fully described by Darwin.*

MOVEMENTS DURING THE DEHISCENCE OF FRUITS.—These cases are mostly of a quite different class of phenomena, and are not characteristic of living protoplasm; for the organs are quite dead and the movements are due to loss or gain of water, elasticity of tissues, &c., and are mechanical. This is well seen in the twisting of the awns of the fruit of *Erodium*, in the elastic and twisting valves of Balsams and of *Cardamine hirsuta*, as well as in the bursting of anthers and sporanges of Ferns.

CONCLUSION.—All the movements referred to, excepting the last, and many more might be described, illustrate but one of the many properties possessed by living protoplasm, viz. its sensitiveness or irritability, by which it can respond to external forces; and, while doing so, it proceeds to build up tissues which permanently supply the plant with highly adaptive structures. For all the phenomena of climbing, of the metamorphoses of organs into climbing structures, have undoubtedly come into existence in response to the direct action of the environment. Since there is no evidence that any structure in plants has ever been *originally* developed *before* its use existed, or *in anticipation* of such use, but solely in *consequence* of it.

* *Movements of Plants.*

GARDENERS—PAST, PRESENT, AND FUTURE.

By Mr. S. HEATON, F.R.H.S.

[Read June 23, 1896.]

I NEED not here apologise for stating that my experience and observations convince me that the Horticulturists in general expect something novel and something tangible from the gentlemen who from time to time read papers at the meetings of the Royal Horticultural Society.

They look to this the leading horticultural society in the world (and to which all similar societies ought to be affiliated, so as to bring the people in every county, in every town, and in every village, into closer contact with the work it is doing, and to the facilities it offers to the horticultural aspirant, be he amateur, cottager, or professional) for wrinkles, ideas, and suggestions on the various subjects dealt with that are not common to every cultivator; therefore, along with other essayists, I find a difficulty that can be better imagined than expressed to meet the wants of a critical gardening fraternity. Criticisms have been common in all ages, to all peoples, in every position of life, and upon all subjects, and undoubtedly if they are rightly and justly expressed may be productive of much good, though we cannot overlook the fact that oftentimes those who have the most to say know the least; nor must we forget that all good work will be subject to storms of abuse, but if rightly established and properly conducted will live and prosper. Through it all "truth and right must prevail."

The object of the present paper is to put forth a plea for a better training and education of our present journeymen and apprentices in whatever branch of gardening they may undertake; whether it be as florist, market gardener, seedsman, landscape gardener, nurseryman, park and gentleman's gardener, or even the humble and often despised jobbing gardener, who is generally "jack of all trades," and is supposed to know and to do anything or everything.

It is essential to so equip the rising generation, who will become the future gardeners, that they may be able to retain the

reputation already earned by the past and present gardeners, and to successfully compete against the importations of foreign produce which are gradually on the increase. Every opportunity should be given and concession made so as to develop the horticultural industry of the old country. The education of foreign gardeners is much superior to our own; they not only possess a knowledge of horticultural and kindred subjects, but they have a good all-round education, and every assistance is given them if they show special abilities for learning, and becoming useful men in their profession.

When the writer was an apprentice he was told that he wanted more back work and less head work; and, when a journeyman, that if he didn't stop writing to the papers he would have to find a fresh place. Is such treatment rational? Is it encouraging and advantageous to an individual or the nation? Is it English? If our young men had the training and the education that their foreign rivals have, I believe they would hold their own against any country in the world; for their energy, perseverance, and determination is unequalled, much less surpassed.

In all trades and professions may be found second- and third-rate workmen; but these have not, as a rule, had a special desire for the work they are engaged in, and for which they seem totally unfitted; but force of circumstances, favouritism, and premiums are generally the cause of the glut of inferior workmen.

GARDENERS—PAST.

We are told that previous to the Roman Conquest gardens worthy of recognition in our own country were conspicuous by their absence; consequently we can logically argue that gardeners of special ability would be equally as conspicuous by their absence. Horticultural progress from this period till the 17th century was very slow and little, through the invasions, agitations, and local wars which kept the country more or less upset and unsettled. In times of peace and plenty there would be, undoubtedly, as in our own day, an increase of gardens, which, along with those already in existence, would be kept in an efficient state; but at the relapse of trade and the appearance of an approaching war the efficiency of the gardens would be

the first to suffer. The wages in those early times were even smaller than in our day, for in the majority of instances they are now much below that of an ordinary mechanic (though there are two sides to the wage question); for digging and ordinary garden work twopence to threepence per day was paid, and for the head gardener about £5 per year with many perquisites, which would most probably make it a fair situation in those early times. We are told in Miss Amherst's "History of Gardening" that the earliest original known work written in English on gardening is by John Gardener; the MSS., which is dated 1440, is still to be found at Trinity College, Cambridge.

It may not be altogether without interest to briefly refer to a few of the more prominent gardeners of the past, the work they have done, and the difficulties they had to fight against. In the writings of Thomas Hill, who was a compiler of books and a prolific writer on all subjects, we find many absurdities on horticultural matters which need pointing out to those who are totally uninitiated in the art of gardening. In one of his works he states that "when the first of Januarie beginneth on the Wednesday, then shall the winter be warm and calme, the spring wette, and disposed to sicknesse, the summer hotte, and the harvest unprofitable. Yet plentie of oyle and wines." In referring to grafting he says that if the small end of the scion is inserted in the stock the "fruit shal have no core," and that if apples be grafted on elm or elder "it shal beare red apples." He also recommended planting when the moon was in Taurus; and the "sowing of pepins and kernels," so that the end which was next the root should be placed to point north-east. From his writings we should imagine he was more theoretical than practical.

John Gerarde, who was born at Nantwich, Cheshire, 1545, and died 1607, was undoubtedly the most practical gardener of the 16th century. He founded the first regular establishment for the scientific cultivation of plants, and laboured unceasingly for many years in the true interests of horticulture. He was for many years gardener to Lord Burleigh, to whom he dedicated his great work on the "History of Plants." The principles he adopted in the cultivating of plants, the objects he aimed at, and the assiduousness with which he laboured are worthy examples for present and future gardeners to adopt. Speaking

of himself he says : "Myself one of your servants (referring to Lord Burleigh), and under your lordship, I have served now by the space of twenty years. To the large and singular furniture of this noble island I have added from foreign parts all the variety of herbs and flowers that I might any way obtain. I have laboured with the soil to make it fit for plants, and with the plants to make them delight in the soil, that so they might live and prosper under our climate as in their native and proper country ; what my success hath been and what my furniture is I leave to the report of them that have seen your lordship's gardens, and the little plot of my special care and husbandry." Again, speaking of his own garden in Holborn, which was then a village outside the walls of London, Gerarde says : "I have here set down not only the names of sundry plants, but also their natures, their proportions, and properties, their affects and effects, their increase and decrease, their flourishing and fading, their distinct varieties and several qualities, as well as those which our own country yieldeth, as of others which I have fetched further." What better example can be recommended or adopted, or one more likely to result in success, than that practised by John Gerarde ?

The names of London and Wise will ever be connected with the gardening of the 17th century.

Of the birth and education of George London little is known ; but during the four years he was under Mr. Rose, gardener to Charles II., he was obliging, energetic, and persevering, so much so that Mr. Rose sent him to France to improve himself in the various branches of horticulture. On his return he was appointed gardener to Dr. Compton, Bishop of London, whose gardens contained the finest collection of plants of any horticultural establishment then in England. But it was in connection with the Brompton Park Nursery and as superintendent of all the Royal Gardens that his name became famous. He and Wise, a fellow pupil whom he took into partnership after the death and retirement of his former partners, seem to have had at that time the charge of nearly all the gardens and parks of note in the kingdom, in addition to the aforementioned nursery, which we are told covered over one hundred acres, and that if the plants had been sold at one penny each the stock would have realised nearly forty thousand pounds.

London was a skilful cultivator of all vegetable produce ; a man of perseverance and industry ; whose labours and works will be an impetus to those who are beginning to flag in the good work in which they are engaged. In the execution of his duties, we are told, he was accustomed to ride fifty to sixty miles a day on horseback. This activity and continued exertion brought on a fever which caused his death after a short illness of a fortnight's duration.

Stephen Switzer, though born in the 17th century, did not really become prominent as a horticulturist till about the year 1702. He was for many years employed under London and Wise, and in 1706 assisted in laying out Blenheim. He afterwards held several situations as gardener, and finally became a general gardener and seedsman at Milbank. During his early years he tells us that cucumbers were seldom seen before the end of May, and melons had rarely been cut before the middle of June ; but still the more industrious were striving to outvie each other as to the earliest date at which these subjects could be obtained. The backward state of horticulture in general in his day he attributed, so we are told, to the ignorance of its practitioners, and that ignorance to the want of encouragement by their employers and the people in general. Many, he says, there are in good places "who never open a book, nor can they either read, spell or pronounce rightly the names of the plants and herbs they every moment have in view." His works and labours are undoubtedly evidences that he was a thoroughly sound and practical gardener. But even in the time of Switzer we find that jealousy and un-English spirit present which is still to be found ; and his opinion of London's abilities as a designer was not very great, nor the abilities of Scotchmen as gardeners, about which he says : "These Northern lads, which whether they have served any time in this art or not, very few of us know anything of, yet by the help of a little learning and a great deal of impudence, they invade these Southern provinces, and the natural benignity of this warmer climate has such a wonderful influence on them, that one of them knows, or at least pretends to know, more in one twelvemonth than a laborious, honest Southcountryman does in seven years."

The position Philip Miller, author of the "Gardeners' Dictionary," attained is an example of what some of our young

men and apprentices may attain if they only receive the timely and kindly help of some friend, along with their own endeavours and exertions. Born of humble parents, his father being a market gardener near Deptford or Greenwich, he was cradled in the craft for which he afterwards became famous. Working his way through many difficulties and hindrances, he eventually became Curator of the Chelsea Botanic Gardens, which position he held for forty-nine years.

The reading of biographies of such men is encouraging, and of a stimulating nature, so that an impetus is given to the reader which develops new life and zeal, oftentimes of permanent endurance, which results in the success and fame of a life which at one time may have appeared blighted through indifference to grasp the golden opportunities offered. No calculation can be made as to the amount of good that would be done by placing within the reach of the young gardeners of to-day the chief incidents connected with the success of their predecessors in the craft who have made themselves famous.

Time forbids further reference to gardeners of the 18th century, and I shall conclude my remarks on gardeners of the past by a brief mention of a few who lived in the 19th century.

John Claudius Loudon is a name that will ever be associated with horticulture and its literature. From his earliest years he had a love for plants and flowers, paying special attention to their requirements, and to the making of beds and walks in the little garden given to him by his father. This natural taste was fostered and encouraged, and every opportunity possible was given to him for acquiring knowledge that would help him on his selected course. At fourteen he was placed under a nurseryman and landscape gardener. In 1803, being then twenty years of age, he moved from Scotland, his native country, to London, and obtained a situation as a landscape gardener. He afterwards became an agriculturist of note and a voluminous writer. He had that energy, determination, and perseverance which are found in few men, and no small obstacles would thwart him from attaining the object he had in view. His "Encyclopædia of Gardening" appeared in 1822, followed by encyclopædias on agriculture, plants, and architecture, the last of which appeared in 1832. Mrs. Loudon says: "The labour was immense, and for several months he and I

used to sit up the greater part of every night, never having more than four hours' sleep, and drinking strong coffee to keep ourselves awake." In 1826 he established the "Gardeners' Magazine," and the "Magazine of Natural History," followed in 1834 by the "Architectural Magazine," and in 1836 by his "Suburban Gardener." In addition to editing these periodicals, he sent out in 1838 his "Arboretum et Fruticetum Britannicum," a work containing a mass of valuable information on the trees and shrubs, native, or introduced into this country. Here is a life worthy of imitation. Is it possible for a man to have more energy, determination, and enthusiasm than John Claudius Loudon, and to attain a higher and more noble position against such obstacles and hindrances as loss of money, sickness, and amputation of his right arm?

Sir Joseph Paxton was not only an excellent engineer, but a very able horticulturist, who rose from the ranks to one of the highest positions in the profession. The then Duke of Devonshire seems to have had a very high opinion of him, for we are told that he said, "I never knew Mr. Paxton (afterwards Sir Joseph) resolve to undertake what he did not fully accomplish."

Shirley Hibberd, an eminent horticulturist and prolific writer, possessed many virtues worthy of imitation; but along with many others of gardening fame we could mention, he has passed away, but left us a store of valuable information in the books he wrote, which will be handed down to posterity as useful and reliable guides in the cultivation of horticultural produce.

GARDENERS—PRESENT.

During the past fifty years great and rapid strides have been made in the cultivation of horticultural produce in general, and we have amongst us many eminent gardeners of all classes who are deeply interested in the development of horticulture. In the more northern and smoky towns we find a gradually increased interest being taken in gardening; so much so that school gardens are becoming very numerous, even in such a manufacturing district as the West Riding of Yorkshire, where there are several horticultural specialists; notably Messrs. B. Simonite (Sheffield) and T. Lord (Todmorden) for Carnations, and Charlesworth & Co. (Bradford) for Orchids. The number of exhibitions are becoming more numerous throughout the country every year,

and the exhibits grown and staged are gradually improving in quality, and the exhibitors are steadily on the increase, till, in a few years' time, there will scarcely be a village, much less a town, without its horticultural show. Such exhibitions are either the outcome of or lead to the formation of Horticultural Improvement Associations, where meetings are held periodically for the reading of papers and the discussion of horticultural subjects. Such organisations for the development of gardening are backed up or assisted by an increased number of gardening journals, which are at such a price as to be within the reach of all (however poor) who love a garden. The more energetic and persevering can now avail themselves of the examinations held annually under the auspices of the Royal Horticultural Society; which, under proper management, can be placed within the reach of all desirous of being examined. These examinations will undoubtedly become more popular and useful as their value becomes appreciated and gardeners in general have a better elementary education than at present. It may scarcely be credited that near the close of the 19th century there are many gardeners who can neither read nor write, and who look upon any organisation for the improvement of future gardeners as a farce and a fraud. What they know they think is sufficient for all time and all people, and what they do not know they think is not worth knowing.

Of the gardeners of to-day one can say a great deal by having practical experience amongst and observations of their labours, customs, and manners. Many of the cottage gardeners have great taste and skill in the cultivation of horticultural produce, and at their respective local shows will succeed with distinction, oftentimes staging produce that would be a credit to a professional gardener. Of such energetic and persevering men we cannot speak too highly, particularly when we take into consideration the long hours many of them have to work and the small wages they receive. Any working man who shows such taste and love for the cultivation of plants should receive every encouragement and assistance from those more favourably situated. On making enquiries we find many instances of cottage gardeners developing into prosperous horticultural tradesmen. All honour is due to such men.

My opinion of the amateur gardener is very considerable; for with such men we generally find they have leisure to devote to

their pet subjects and ample means to procure every essential requisite for their cultivation. Many of them are also of an experimental turn of mind, and do incalculable good towards the development of horticulture by recording in the various gardening periodicals the results of their labours.

Of market gardeners we observe a wonderful difference as regards tact, energy, and perseverance in the acquiring of knowledge, and putting that into practice so as to increase the turnover at little or no extra expense. Foresight is a great factor in the success of such a business, and for a person to enter the race with any chance of success he must either have had a good practical training or be especially endowed with business abilities. Of all the various branches of horticulture this is one which demands our greatest attention, particularly if we are to hold our own against the increased importations of foreign produce. It is not for me to say what can or ought to be done to encourage the development of home-grown produce at such a price as to ensure the support and patronage of our own people. But I can say that, even amidst the keen foreign competition of the present time, I know many English growers who are making a living, and who are from time to time enlarging their business premises. As Englishmen we cannot afford to be daunted by the depressed state of commercial horticulture, but must fight against it with renewed energies, and eventually victory will be ours.

As to the gentleman's gardener, I look upon him, if properly trained and interested in his work, as an all-round man, and one that can undertake the management of any branch of horticulture with credit to himself and satisfaction to his employers.

Perhaps it would be invidious to individualise, as there are so many good men and true who have done invaluable service in the interests of horticulture. But I may be pardoned for stating what a gentleman's gardener's qualifications are expected to be. First of all, his character must be able to bear the strictest investigation; his integrity and uprightness irreproachable. His general appearance should have a commanding influence, and his countenance of a drawing rather than of a repulsive nature; a man you can approach with the confidence and assurance of having meted out to you justice tempered with mercy. As to his abilities, he must not only be thoroughly practical in all

branches of the profession, but he must have good managing abilities, and be thoroughly educated so as to converse on any or all subjects with the ease and comfort of a barrister-at-law. A typical gentleman's gardener I look upon as one of England's greatest sons.

As to the prospect of women gardeners I cannot speak with any practical experience, but the following points may be worth discussing, viz. :—(1) What influence will they have on the future prospects of young men gardeners? (2) Will their physical strength allow them to become thoroughly practical in all branches of gardening? (3) What are their prospects for positions as head gardeners and managers?

GARDENERS—FUTURE.

The principal object of this paper, as already stated, is to put in a plea for the better training and education of the apprentices and journeymen of to-day, who will in the future become the head gardeners and managers of our various horticultural establishments.

Many of the points raised may be contentious; but it will undoubtedly amply repay for any discussion there may be on such an important subject, if it leads to a greater interest being taken in the welfare of our young men by their employers and head gardeners.

If the integrity and calibre of the profession are to be maintained, nay, improved, we must endeavour to bring the best men to the front without fear or favour, and with the manliness of true Englishmen. Some gardeners, unfortunately, immediately suppress any signs of enthusiasm or special ability any of their subordinates may display, thinking that their ideas are premature and considerably in advance of their years and practical experience, and that they want to override their superiors. This is not always the case, and they may be nipping in the bud what would have developed into a valuable bloom and a great acquisition to the profession. It certainly requires a great amount of tact and judgment to manage a number of men judiciously. Head gardeners have a great influence on the future of their young men, and ought to treat them and be as interested in their future welfare as if they were their own sons, rejoicing in their successes and sympathising with them in their misfortunes.

A thorough education of our young gardeners should be of a threefold nature : [There must be an education of the head. Every young man ought to be taught to think and reason for himself, and not work like a machine, a system which unfortunately is much too common amongst all classes of artisans : they are set on and off either with a bell or whistle, they go through the same or similar operations day after day without adding one scrap of knowledge to their store, and take it as a matter of course.

Then a thorough education of the hands is indispensable to the future of any young man ; it is necessary we should be taught to work, or else how can we teach others ? Our horticultural establishments are excellent schools, as a rule, in which to receive a practical training in the various branches of gardening.

Finally, we must have an education of the heart, a branch of education which is too much neglected ; the example shown the apprentices by the journeymen and even by the head gardener in a good many places is to be deplored. A good moral character is a valuable testimonial to the young gardener : he must be sober, honest, and trustworthy. To be trained under a good gardener who is a disciplinarian is an advantage young men ought to prize.

We may now profitably note a few of the hindrances to a young gardener obtaining such an education, however anxious and persevering he may be. First, there may be the indifference of the head gardener to his future welfare ; second, the inability of the head gardener, who may have taken up gardening through force of circumstances, and consequently never had a proper training ; third, the long hours which are worked in most gardens give little time for study in the summer, without saying anything of the recreation which ought to be an important factor in his training. "All work and no play makes Jack a dull boy." Fourth, isolation or the inconvenient distance from towns some gardens are situated, thereby making it impossible for the young men to attend the various classes held on subjects of material value, with which every gardener ought to make himself acquainted. Fifth, domestic circumstances have more or less influence on the education of a young man. If he has a small wage, and a portion of it has to go towards supporting his parents or relatives, it prevents him from obtaining the necessary

books to pursue a course of study, or from attending lectures and classes on subjects in which he is interested, and this will have an influence on his future position in life. Sixth, a deficient elementary education is one of the greatest hindrances to the success of any young gardener, and it must be a source of gratification to all interested to see the improved system of elementary education compared to that of even twenty years ago as given in country schools. Not only is there an improved method of teaching, but the scholars must be regular and punctual in their attendance, in addition to a longer school period.

The future prospects of those who are indifferent and half-hearted in their work are handicapped by having a limited experience. They may go as a boy to help a single-handed gardener, and instead of moving at the end of two years they remain till manhood is reached, and then they are thrown into competition with those who have had a varied experience in many horticultural establishments of note throughout the country, to find, to their disgust, they must either remain as journeymen, or at the best be contented with a single-handed place where the gardener is expected to make himself generally useful.

The company a youth keeps will have a great influence on his success or failure. If he becomes associated with those who frequent music-halls and gin-shops his chances of attaining an honourable position in his profession are few and very uncertain. The leisure time any young gardener may have should be well and judiciously utilised, and not wasted in frivolity and sin.

Early marriages are not always conducive to the future success, prosperity, and happiness of a gardener, and it would be well for every young man to give the matter his serious consideration before entering the matrimonial state. For he will find many of the advertisements for gardeners close with a special request that there be no family, or if a family is allowed it must be a small one.

Among the many facilities for obtaining horticultural instruction, I would particularly recommend those interested to take every advantage of horticultural improvement associations, local exhibitions (which from an educational point of view can be greatly improved, and it is for some prominent society to lead the way), county council lectures, which can be attended with little

or no expense, and horticultural literature, which is so plentiful and cheap.

To those who have the privilege or can afford it, I should recommend a two years' experience at either Kew, Chiswick, or a horticultural school. But, alas! the majority of those who enter the gardening profession have no such golden opportunities; therefore, in addition to accepting the general privilege above named, make as many visits to horticultural establishments of note as you can afford, and, above all, two hours a day at the very least should be devoted to the study of such subjects as drawing, botany, geography, &c.

In conclusion, I may be pardoned for suggesting that the Council of the Royal Horticultural Society consider the question of improving the educational conditions of our young gardeners. It is true that the *bona fide* gardener can be a Fellow of the Society with all its advantages for a small fee, but I am afraid this is not sufficiently well known; therefore it might be an advantage to have this information placed on a fly-sheet and posted to every known gardener in the United Kingdom.

Then, again, as to the Society's examinations, I have found many young gardeners who would like to go in for a certificate or scholarship, but having had no coaching and never having sat at an examination they felt afraid.

If the Council could make arrangements for Fellows of the Society to give preparatory lessons and conduct examinations in every town and parliamentary division in the country, I feel convinced that not only the examinations would be better appreciated, but the success of the Royal Horticultural Society would be assured. By such an arrangement the examinations could be made more practical, which would greatly enhance their value, and book knowledge alone would not be sufficient to obtain the Society's certificate.

It is pleasing to note a deputation from the Council visiting provincial shows and making awards according to the merits of the produce shown.

REVIVAL OF THE OLDER ROSES.

By Mr. GEO. PAUL, F.R.H.S.

[Read before the Horticultural Club, 1896.]

THOSE who have read Mr. Jeans's interesting and learned articles in the *Quarterly Review* on ancient Rose growers need not fear that I shall weary them by helping to trace back the varieties which supplied the florists' shops of Rome in the time of the Emperors, or which were grown by the florists of Pæstum and Palestrina to send to the Roman Covent Garden—Palestrina, a Florentine suburb, the scene of one of Ouida's idyllic stories—"a winter city" where (as she describes it) for a few francs, in midwinter, every corner of her heroine's rooms was filled with pot Roses, and the atmosphere scented with their perfume.

I suppose the only Rose Mr. Jeans identifies as coming down to us from that ancient town is the old *R. centifolia*, single or double, of which the old Red Burgundy Rose and the miniature Burgundy are the existing representatives, which reached us, so he says, and I am told that Dean Stanley in his letters confirms it, by means of the Crusaders *via* Provence, of which, however, somewhat more anon.

My subject is rather the revival of the taste for the old-fashioned garden Roses, which were put on one side by reason of the florists' zeal or other causes, and have recently been rescued from their hiding places and brought again into general cultivation.

I shall speak first of the Roses which grew in English gardens from Gerarde's time, about 1600, to the close of the last century, and secondly of the Roses which were the favourites, and the products of the raisers' skill, of the first forty years of the present century; produced in the earlier years by Vilmorin, Cels, and Dupont, and later on by Victor Verdier and Laffay in France, and by Rivers in England, up to the days of the elder Guillot and Lacharme, including also the later Roses recorded in Redouté, and by Andrews and Miss Lawrence in England.

The seventeenth-century Roses are given, several of them, in Gerarde, but I have not had time to search his volumes. Aiton, however, quotes him in his "*Hortus Kewensis*" (1789), and I find he grew so many of the Kew sorts that I feel inclined to

think that not much progress was made with the production of new ones to interest us between Gerarde's and Aiton's time.

Of kinds *now* sought after and much in request then growing at Kew, we find of Moss Roses only one, the common mossed form of the Provence. This was cultivated by Farber in 1724, and has been more asked for during the last two years than for many years past.

Of the Musk Roses the double white has been regained, and is well deserving of culture. Of the Alba section, the first of which is reputed to be a natural hybrid, the large Maiden's Blush has become suddenly asked for. We can understand its popularity from its beautiful colours; it never left old-fashioned gardens for this reason. The small form which Aiton grew is, I fear, lost. Gerarde grew the Austrian briar in 1596, and they had *R. sulphurea*, the old yellow Provence, both at Kew and at Versailles. De la Quintinie gives its culture much as Gilbert grew it at Burleigh, and its old name of Yellow Provence (though it has nothing to do with Provence Roses proper) points to its having reached us through Provence. I would suggest to Mr. Jeans that he should turn his scholarly attention to the Provence poets, as it is in the poems of the *langue d'oc* that he would probably find more of the poetry of the Rose than in either the Greek or Roman poets.

In the Cabbage or Provence Rose proper we are no richer now than then. The Red, blush, and white, and the *De Meaux* and large *De Meaux* (our Spong), have, though never lost, risen again into favour. It is understandable. What makes a more lovely vase decoration than a handful of Cabbage Roses with long stalks? I believe skilled Rose botanists, such as Crépin, think *R. centifolia* (Provence) and *R. gallica* almost one. I have quoted the Single Burgundy as a type of the old Provence, but this July we have flowered the Single Provence; of *R. gallica* a typical form is the old Red Damask, and its striped form *Rosa Mundi*—Queen Rosamund's Rose.

Closely related is the York and Lancaster Rose, of which Mr. Jeans speaks. The red and white are from the same source, grafted plants from one original plant.

Somerset.—"Let him that is no coward, nor no flatterer,
But dare maintain the party of the truth,
Pluck a red Rose from off this thorn with me."
Warwick.—"I pluck this white Rose with Plantagenet."

Poor Louis XIV. was richer in Carnations, of which he had three hundred sorts, than in Roses. De la Quintinie, in 1727, grew only *R. centifolia* of Holland (I wonder if this is the Rose des Peintres or Rose de Cels of Redouté), Damask, Gallica, Alba, Provence, Rose de tous les mois, Double Yellow (*R. sulphurea*)—not a large collection for so great a monarch. In England we had the marbled and double white and red Sweetbriars; and Janet's Pride, refound by Mrs. Whitwell of Denbigh, seems to be the double sweetbriar of Aiton's collection.

Of the second series, the old Roses which since the beginning of the century came and went, and have recome, we owe much to the monumental work of Redouté, unquestionably the finest book on Roses ever published. We have in Miss Lawrence's and Andrew's Roses no reason to be ashamed of our Rose literature of that period. One is pleased to find Redouté quotes them with approval. I do not know if the Versailles Rose de tous les mois was *R. semperflorens* or *R. indica*, or the later received China Rose, but I find the common double pink China Roses were introduced in 1793 into a Hertfordshire garden, and I have heard my father say that it was by means of the successful culture of this and the later coming crimson China Rose that my grandfather, Adam Paul, in the first years of the century, made the early reputation of the Cheshunt nursery for Roses.

In Redouté's times the Gallica Roses were what the Hybrid Perpetuals have been to the growers from 1840 to now. He has a long enough list to fill the whole of the Greek alphabet, and at the end to begin numbering, and when in 1845 you turn to the Rose catalogues of the period, and find the culmination of the family from 1807 to 1845, there are three pages of names. The Pope, King Louis Philippe, and William IV. grace, or are graced by their names being attached to Roses; there are Grands and Glories, tragediennes and heathen gods in the Gallica Roses as well as among the H.P.'s.

I came just as they were disappearing. I recollect Ohl, which mostly had a green eye; Boule de Nanteuil, which had shorter petals towards the edge of the flower. As far as I am concerned, I do not wish to see any of them back again. In the words of the Mikado, "They'll none of them be missed."

The Provence Roses had become nearly as numerous as the Gallicas. To the old kinds had been added Crested, the Lettuce-

leaved Rose. We have regained this, and the smaller flowered Provence. The Crested Moss Rose was raised by Colville. Imagine Roses in the King's Road, Chelsea!

The Damask Rose and Alba were of this period. One regrets them for their charming colouring, and is glad to find that the Painted Damask (Leda), Madame Hardy, and Madame Zoetman (whites), amongst the Damasks, and Blush Hip and Félicité amongst the Albas with the single and semi-double forms, have been regained from cottage gardens of our own neighbourhood.

The Hybrid Chinas were a special product of the early years of the nineteenth century, and have been retained and brought greatly into notice again for pillar Roses.

The finer sorts, like Blairii No. 2, raised on Stamford Hill, Coup d'Hébé, Madame Plantier (of which there is an old Cheshunt legend to the effect that a big bush frightened a timid Londoner back to town—ghosts being frequent in those days), Fulgens, and General Jacqueminot: to the last we owe an obligation, for my father always thought that his Duke of Edinburgh, still one of the most brilliant H.P.'s, was the result of crossing the hybrid perpetual General Jacqueminot with the old hybrid China of like name, Wolsey, the foreman who did it, being evidently a man in advance of his time. We have refound besides those named Paul Perras, Paul Ricaut, and Brennus.

Double Scotch Briars I have tried to get back, but if they are not lost they have lost their names even in the far north, and though we have got now the double white, purple, pink, blush, and yellow, we have only been able to trace of named sorts James' purple and William IV. The fine single *R. altaica* of Kew (and *R. grandiflora* of Canon Ellacombe) looks like a large variety of the Burnet Rose of the West Welsh and Scotch coasts. The Austrian Roses have developed Harrisonii and Persian Yellow, the only doubles produced.

I am always a strong supporter of the climbing Roses, their uses are so manifold. The Boursaults and Ayrshire clothe our tumbledown buildings. Evergreen Roses cover up the ugly wires on which we base our arches, and the *Multifloras* (or *Polyanthas*) have produced Turner's Crimson Rambler.

I will not weary you with the earlier H.P.'s. They played their part, and do not want recalling. But amongst the smaller classes, the big single Macartney Rose (*bracheata alba simplex*

is one of the best south wall clothers. *R. microphylla* with its hedgehog bud is curious, especially the double form.

The Perpetual White Moss (*Mousseux des quatre saisons*) has the prettiest buds of any Rose. Stanwell Perpetual is the first Rose to flower of any. Of the Damasks we have old Du Roi back again.

Old Phillipe Noisette, when he raised the Crimson Noisette in America, and sent some plants east to France, little thought the family would culminate in Maréchal Niel. The man will live rather through being chairman of the day when the Rose was first shown in Paris than through his martial achievements.

Bourbons have begun again since their first hybrid was found in an island in the Indian Ocean. Malmaison has never retired. Armosa is *par excellence* the dwarf hedge Rose. Sir Joseph Paxton and Bourbon Queen have been found and propagated.

Lastly we come to the Chinas and Teas. To the first I have already alluded. The early forties added Mrs. Bosanquet, still the best light China, Archduke Charles, Cramoisie, and Abbé Miolan Fellenberg and La Vesuve have been recalled.

Of Tea Roses we have no revival. I should like to find Originale. It existed in 1854, and is, I believe, identical with Redouté's "Tea." Of older Teas, except Adam, and perhaps Vicomtesse de Cazes, there does not seem to be much worth revival.

There is a moral to everything. This is mine. Wanted a refuge for old Roses, where they may be found again when tastes change.

When at the Floral Committee of the Royal Horticultural Society a plant occurred that did not suit the florist's taste; it was met by "Send it up to the Scientific Committee." May I suggest that botanic gardens would be useful as custodians of the "old Roses," keeping them ready for the next change of fashion in flowers?

EXAMINATION IN HORTICULTURE

MAY 6, 1896.

EXAMINERS' REPORT.

To the President and Council of the Royal Horticultural Society.

Gentlemen,—We beg leave to report that we have examined the papers submitted to us—in all 152.

Of these we selected 16 as worthy to be placed in the first class, 53 in the second, and 49 in the third. The remainder were passed over.

The candidates were distributed over the whole of Great Britain, but no papers were received from Ireland.

The Examination, as a whole, shows, in our opinion, that a more intelligent appreciation of the principles underlying practical horticulture is prevalent than was the case in previous years; nevertheless there is abundant evidence to show that if the hands are trained to work, the eyes are not correspondingly taught how and what to see. Correct observation of the most common objects is still rare except among those who have had the advantage of adequate training.

We have the honour to be, Gentlemen,

Your obedient servants,

MAXWELL T. MASTERS,

JAS. DOUGLAS.

June 20, 1896.

The names and addresses of the successful candidates, together with the number of marks assigned to each, are given in the following Class List, to which is appended the questions set by the Examiners:—

CLASS LIST.

*Maximum number of marks obtainable, 300.**First Class.*

	No. of Marks gained.
*1. Mr. E. T. Hearn, Central Laboratory, Chelmsford .	255
2. Mr. W. Pratchett, Central Laboratory, Chelmsford .	240
3. Mr. W. H. Patterson, „ „ .	237
4. Mr. W. G. Martin, Central Laboratory, Chelmsford .	235
5. Mr. Joseph Mitchell, Haslington, Crewe . . .	230
6. Miss Gertrude Cope, Horticultural College, Swanley .	227
7. Mr. Frederick J. Chittenden, Central Laboratory, Chelmsford	225
8. Mr. J. W. Dupré, National School, Handforth . .	217
9. Miss F. M. G. Micklethwait, Horticultural College, Swanley	215
10. Mr. H. Ward, Breadsall Priory, Derby . . .	213
11. Mr. Fredk. C. Stacey, Central Laboratory, Chelmsford	210
12. Mr. Arthur H. Beeby, Central Laboratory, Chelmsford	207
13. Miss Sarah L. Saunders, Central Laboratory, Chelms- ford	205
13. Mr. H. W. Hotten, Horticultural College, Swanley .	205
13. Mr. John R. Giles, Swindon, near Dudley . . .	205
16. Miss A. Geoghegan, Horticultural College, Swanley .	200

Second Class.

1. Mr. J. Laws, Church Road, Wimbledon . . .	195
1. Mr. J. H. Annear, Central Laboratory, Chelmsford .	195
1. Mr. A. Owens, St. Clere Gardens, Kemsing, Sevenoaks	195
1. Miss Lloyd Saunders, Central Laboratory, Chelmsford	195
1. Miss Lina Barker, Horticultural College, Swanley .	195
1. Mr. C. J. Langley, Central Laboratory, Chelmsford .	195
7. Mr. J. Hyatt Williams, Great Sanghall, Chester .	190
7. Mr. H. Swain, Glynne, Kingswinford, Dudley . .	190
7. Mr. E. W. Cork, 33 Dale Street, Leicester . . .	190
7. Mr. Jas. Hill, Central Laboratory, Chelmsford . .	190
7. Miss O. Field, Horticultural College, Swanley . .	190
7. Miss E. Malden, Slad Road, Stroud, Gloucester . .	190
13. Mr. B. F. Mason, Wordsley, Stourbridge . . .	185

* Wins the Society's Silver Gilt Medal.

	No. of Marks gained.
13. Mr. H. Brook, Every Street, Nelson, Lancs.	185
13. Mr. R. Bellerby, Grange Gardens, Askham Richard, York	185
13. Mr. A. D. Henderson, Horticultural College, Swanley .	185
13. Miss E. A. Ford, Horticultural College, Swanley . .	185
18. Mr. W. E. Stevens, New St., Brierly Hill, Stourbridge	180
18. Mr. J. Poulter, Clayton-le-Moors, Accrington . . .	180
18. Mr. J. Child, 61 Navigation Road, Altrincham . . .	180
18. Miss N. Quinn, Horticultural College, Swanley . . .	180
18. Miss H. N. Payne, Horticultural College, Swanley . .	180
23. Miss L. A. Dunington, Horticultural College, Swanley	175
23. Mr. N. Warren, 3 Pitville Street, Darwen	175
25. Miss L. Udall, Horticultural College, Swanley . . .	170
25. Mr. Edmund Smith, Edgend, Brierfield, Burnley . .	170
25. Mr. A. Randall, Aigburth	170
25. Mr. Hans Trier, 6 The Terrace, Champion Hill, S.E.	170
29. Mr. M. Paton, Rigg Street, Stewarton, Ayrshire, N.B.	165
29. Mr. W. J. Butler, Horticultural College, Swanley . .	165
31. Mr. R. Oddie, Long Butt, Lymm	160
31. Mr. A. D. Thompson, Horticultural College, Swanley .	160
31. Mr. Arthur A. Stevens, Hale, Farnham	160
31. Mr. G. Sherman, Alderton, Woodbridge, Suffolk . .	160
31. Mr. E. Jackson, Aigburth	160
31. Mr. H. S. Langford, Horticultural College, Swanley .	160
31. Mr. A. J. Cocks, Horticultural College, Swanley . .	160
31. Mr. G. Atkey, Horticultural College, Swanley . . .	160
39. Mr. J. Ettle, Glais House Gardens, Swansea Valley .	157
40. Mr. C. Lawrance, Horticultural College, Swanley . .	155
40. Miss E. M. Groome, Horticultural College, Swanley .	155
40. Mr. Isaac Godber, Hill Top House, Palterton, Chesterfield	155
40. Mr. G. W. Brookbank, 62 Queen's Road, Wimbledon .	155
40. Mr. A. N. Pierce, Redhill, Surrey	155
45. Mr. H. Greenfield, Horticultural College, Swanley . .	150
45. Miss Elsie A. Benians, Horticultural College, Swanley	150
45. Mr. A. George, Pear Cottage, Milton, Cambridge . .	150
45. Mr. A. D. Morris, Barrowmore Hall Gardens, near Chester	150
45. Mr. F. Pownall, School House, Great Haywood . . .	150
45. Mr. W. Bygrave, Royston, Herts	150

	No. of Marks gained.
45. Mr. J. Slack, Jodrell Hall Gardens, Holmes Chapel .	150
45. Mr. C. E. Walter, Horticultural College, Swanley .	150
45. Mr. Joseph Read, Jodrell Bank, Holmes Chapel .	150

Third Class.

1. Mr. Leo Farnar, Horticultural College, Swanley .	145
1. Mr. J. Collett, New Street, Wordsley, Stourbridge .	145
1. Mr. H. J. Smith, Royal Promenade, Clifton .	145
1. Mr. C. H. Burden, Horticultural College, Swanley .	145
1. Mr. C. J. George, Horticultural College, Swanley .	145
6. Mr. E. Allard, Botanical Gardens, Cambridge .	140
6. Miss C. L. Verney, Kingston Hill	140
6. Mr. T. Lyon, Grassendale, near Aigburth . . .	140
6. Mr. G. H. Wicking, Montague Road, Clarendon Park, Leicester	140
6. Miss Margaret White, Central Laboratory, Chelmsford	140
6. Mr. G. P. Selden, Reigate	140
6. Mr. S. Andrews, Heatherdene, Farnham . . .	140
13. Mr. H. Phillips, Kingswinford, Dudley . . .	135
13. Mr. F. R. Willey, Pearcefield Avenue, Forest Hill, S.E.	135
13. Mr. T. Woof, Wall Heath, Dudley	135
13. Mr. A. Evans, Grappenhall, Warrington . . .	135
13. Mr. F. Lazenby, Cambridge	135
18. Mr. Arthur Jewell, Horticultural College, Swanley .	130
18. Mr. Martyn Tucker, Horticultural College, Swanley .	130
18. Miss E. Barratt, Central Laboratory, Chelmsford .	130
18. Mr. J. C. Scammell, South Street, Wilton, Salisbury .	130
18. Mr. J. W. Thompson, Holywath Cottage, Coniston, R.S.O.	130
23. Mr. H. Blundell, Horticultural College, Swanley .	125
23. Mr. J. W. Bamforth, Swindon, near Dudley . .	125
23. Mr. John Sutton, Old Swinford, Stourbridge . .	125
23. Mr. G. Underwood, Leicester	125
27. Mr. John Snell, Grimston Park Gardens, Tadcaster .	120
27. Mr. O. D. Carter, Central Laboratory, Chelmsford .	120
27. Mr. W. Walker, Lacey Cottage, Coulsdon . . .	120
27. Mr. G. Cole, Bulbridge Lodge, Wilton, Salisbury .	120
27. Mr. N. E. Hopkins, 81 Peterborough Road, Fulham, S.W.	120

	No. of Marks gained.
32. Miss A. Morison, Horticultural College, Swanley	115
32. Mr. A. Sowman, Woodbridge, Suffolk	115
32. Mr. W. Pascoe, Hamble, near Southampton	115
32. Mr. Francis Holt, 9 Hollins Lane, Accrington	115
36. Mr. James Barkham, Haven Street, Ryde, I. of Wight	112
37. Miss N. V. M. Baker, Central Laboratory, Chelmsford	110
37. Mr. G. H. Hodgson, Elsham House Gardens, Grantham	110
37. Mr. W. G. Cole, 2 Dynevor Place, Richmond, Surrey .	110
37. Mr. W. Jennings, Middlewich Road, Holmes Chapel .	110
37. Mr. Jos. Loder, Abingdon Union, Abingdon	110
37. Mr. J. S. Thompson, Horticultural College, Swanley .	110
37. Miss Jessie Newsham, Horticultural College, Swanley.	110
44. Miss A. N. Roach, Warford, Alderley Edge, near Manchester	105
45. Mr. Walter Pilcher, Horticultural College, Swanley .	100
45. Mr. W. Sproston, Great Haywood, Stafford	100
45. Hr. H. D. Prosser, Glasbury, Breconshire	100
45. Mr. J. K. Elsie, Merstham, Surrey	100
45. Mr. G. F. Dale, Little Haywood, Stafford	100

ROYAL HORTICULTURAL SOCIETY'S EXAMINATION IN HORTICULTURE, MAY 1896.

QUESTIONS.

Eight questions only to be answered : four from Division A and four from Division B.

DIVISION A.

ELEMENTARY PRINCIPLES.

1.—What are the objects sought to be obtained by digging the soil ? Of what use is it to the crops ?

2.—What do plants do when exposed to bright sunshine, and what takes place when they are subjected to total darkness ?

3.—Of the elements and compounds that go to make up the constitution of plants, a few occur in much larger proportion than others. Which are they, and whence are they obtained ?

4.—What are the “reserve materials” of plants ? Where are they stored ? What use is made of them ?

5.—What are the essential points in the structure of roots as contrasted with that of stems ?

6.—What are the special effects produced by nitrogenous manures and by mineral manures respectively ?

7.—Describe the shoot of a Peach tree and the arrangement of its buds.

8.—What part of the plant furnishes the vegetable known as Asparagus ?

9.—What are the main differences between the “seed” of a flowering plant and the “spore” of a fungus ?

DIVISION B.

HORTICULTURAL PRACTICE.

1.—Describe the preparation of the ground for the Onion crop ; the method of sowing the seed and subsequent treatment ; also the most suitable soil.

2.—What are the circumstances which should regulate the frequency of watering and the amount of water to be given to plants in pots ?

3.—Describe the most suitable soil, and the method of culture, for such tap-rooted vegetables as the Carrot and Parsnip.

4.—Say what you know about the origin of the Cherry and Apricot ; the soil and manure most suitable to each ; the diseases they are subject to, and the most effective remedies.

5.—Give the names of the best varieties of Strawberries. What is the most suitable soil for their culture ? Describe the culture (in detail) for forcing and the open garden.

6.—What is the origin of the Carnation and the garden Pink ? How may a supply of flowers be obtained from these plants all the year round ? Describe the diseases and the methods of prevention and cure.

7.—Describe the culture of the Daffodil ; its propagation ; the diseases and other enemies that attack the plants, and the best treatment.

8.—Describe the general details of Orchard House Culture, and state whether there are any advantages in growing fruit trees in pots.

9.—What are the best methods for ventilating hothouses and for shading the plants ? Give general details.

REPORT ON PEAS GROWN AT CHISWICK, 1896.

Sixty varieties of Peas were sent to the Gardens for trial, and, with two exceptions (seed received very late), they were all sown on March 17 on ground that had been trenched three feet deep, and well manured. The season being so dry proved very trying, and no doubt if the usual amount of rain had fallen the haulm would have been taller. On the whole the growth was very satisfactory, and the crops a success. Two meetings were held by the Fruit and Vegetable Committee to examine the stocks. The first was held on June 15, to inspect the early varieties, and the second on June 29, to examine the later sorts.

× × × = HIGHLY COMMENDED. × × = COMMENDED.

(1) The Sutton Forcing (Sutton & Sons). Good cropper; haulm, pods, and peas pale green, averaging five peas in a pod; of good flavour. Height of haulm 9 inches. Ready for use June 15. Seed wrinkled.

(2) Selected American Wonder (Sutton & Sons). A good type of this well-known variety, averaging five peas in a pod. Height 9 inches. Ready for use June 15. Seed wrinkled.

(3) Sutton's Excelsior (Sutton & Sons). Moderate cropper; haulm, pods, and peas light green, averaging six peas in a pod; of good quality. Height of haulm 9 inches. Ready for use June 15. Seed wrinkled.

(4) Sutton's Seedling Marrowfat × × (Sutton & Sons). Excellent cropper, the best of the very dwarf section; haulm, pods, and peas pale green, averaging eight large peas in a pod; very sweet in flavour. Height 9 inches. Ready for use June 15. Seed wrinkled.

(5) English Wonder (Sutton & Sons). Much like American Wonder, but taller and a heavier cropper, averaging six peas in a pod; of good flavour. Height 15 inches. Ready for use June 15. Seed wrinkled.

(6) William Hurst (Sutton & Sons). Good cropper; haulm, pods, and peas light green, averaging five peas in a pod; sweet in flavour. Height 12 inches. Ready for use June 13. Seed wrinkled.

(7) Sutton's May Queen (Sutton & Sons). Heavy cropper;

haulm, pods, and peas pale green, averaging six peas in a pod ; of good flavour. Height 3 feet. Ready for use June 13. Seed wrinkled.

(8) Sutton's A 1 (Sutton & Sons). Profuse bearer ; haulm, pods, and peas pale green, averaging eight peas in a pod ; of good flavour. Height 3 feet. Ready for use June 12. Seed wrinkled.

(9) Exonian (Sutton & Sons). Great bearer ; haulm, pods, and peas dark green ; pods small but well filled with an average of eight peas ; quality fair. Height 3 feet 6 inches. Ready for use June 15. Seed wrinkled.

(10) Sutton's Bountiful $\times \times \times$ (Sutton & Sons). An abundant bearer ; haulm, pods, and peas grass green ; pods well filled with an average of seven peas in each ; flavour sweet and excellent. Height 3 feet 6 inches. Ready for use June 15. Seed slightly wrinkled.

(11) Eclipse (Sutton & Sons). Very similar in appearance to Exonian, but a little earlier than that variety, and the seed more wrinkled. Ready for use June 13.

(12) Sutton's Productive Marrowfat (Sutton & Sons). Heavy cropper ; haulm, pods, and peas pale green ; pods in pairs, averaging five peas in each ; flavour sweet and good. Height 2 feet. Ready for use June 17. Seed wrinkled.

(13) Sutton's Favourite Marrowfat (Sutton & Sons). Moderate cropper ; haulm, pods, and peas light green ; pods usually single, with an average of five large peas in each ; flavour sweet and good. Height 2 feet. Ready for use June 18. Seed wrinkled.

(14) Advancer (Sutton & Sons). Heavy cropper ; haulm, pods, and peas light green ; pods small, averaging four peas in each ; flavour fairly good. Height 2 feet 3 inches. Ready for use June 23. Seed wrinkled.

(15) Sutton's Prizewinner $\times \times \times$ (Sutton & Sons). Moderate bearer, pods single ; haulm, pods, and peas a beautiful dark green ; pods long, straight, and averaging six large peas in each ; flavour excellent ; a fine exhibition variety. Height 2 feet. Ready for use June 24. Seed wrinkled.

(16) Sutton's Eureka $\times \times \times$ (Sutton & Sons). Profuse cropper, pods in pairs ; haulm, pods, and peas grass green ; pods long and averaging eight peas in each ; flavour very good. Height 3 feet. Ready for use June 25. Seed wrinkled.

(17) Yorkshire Hero (Sutton & Sons). Excellent bearer, pods in pairs; haulm and produce pale green; flavour good; a well-known old favourite. Height 2 feet. Ready for use June 24. Seed wrinkled.

(18) Sutton's Magnum Bonum Marrowfat (Sutton & Sons). Good cropper, pods in pairs; haulm, pods, and peas dark green; pods well filled with an average of seven in each; flavour good and sweet. Height 3 feet. Ready for use June 29. Seed wrinkled.

(19) Sutton's Exhibition Marrowfat (Sutton & Sons). Moderate cropper, pods in pairs; haulm and produce dark green; pods straight, averaging seven large peas in each; flavour fair; fine exhibition sort. Height 3 feet. Ready for use June 29. Seed wrinkled.

(20) Dr. McLean (Sutton & Sons). A well-known old variety. Height 2 feet 6 inches. Ready for use June 26. Seed wrinkled.

(21) Sutton's Late Queen (Sutton & Sons). Good cropper, pods in pairs; haulm, pods, and peas dark green; flavour excellent. Height 3 feet. Ready for use June 29. Seed wrinkled.

(22) Walker's Perpetual Bearer (Sutton & Sons). Good cropper, pods in pairs, dark green, and averaging five large peas in each; of good flavour; an old variety. Height 3 feet. Ready for use June 29. Seed wrinkled.

(23) Hundredfold (Vilmorin). Great bearer, pods in pairs; haulm, pods, and peas dark green; pods short and well filled with an average of five medium-sized peas of fair flavour. Height 4 feet 3 inches. Ready for use June 24. Seed round.

(24) Tall Butter Sugar $\times \times \times$ (Vilmorin). Good cropper, pods in pairs; haulm, pods, and peas a pale green. The peculiarity of this pea is that it is intended to be cooked and eaten exactly as it is gathered, pods and all. When cooked for the Committee they considered the pods and peas of excellent flavour, and the variety to be of considerable merit. Height 4 feet. Ready for use June 24.

(25) Serpette Express (Vilmorin). Good cropper, pods in pairs, small but well filled, with an average of six peas in each; flavour second-rate. Height 3 feet 6 inches. Ready for use June 22. Seed slightly wrinkled.

(26) Dwarf Bebarbieux Edible-podded (Vilmorin). Moderate

cropper; haulm and pods light green; flavour fairly good. Height 3 feet. Ready for use June 29.

(27) Early Dwarf Clamart (Vilmorin). Profuse bearer, pods in pairs; haulm, pods, and peas dark green; pods short, with four peas in most; flavour moderately good. Height 18 inches. Ready for use June 23. Seed round.

(28) Pluperfect Marrow (J. Veitch & Sons). Heavy cropper, pods in pairs; haulm, pods, and peas a light grass green; pods straight, and well filled with an average of six peas of good flavour. Height 4 feet. Ready for use June 24. Seed wrinkled.

(29) Carter's Michaelmas (J. Carter & Co.) $\times \times \times$. Heavy cropper, pods in pairs; haulm, pods, and peas a very dark green; very robust; pods large, and well filled with an average of seven large peas; of first-rate quality. Height 3 feet. Ready for use June 29. Seed wrinkled.

(30) Carter's Springtide (J. Carter & Co.). Crop light, and not a success. Height 2 feet. Ready for use June 17. Seed wrinkled.

(31) Orchard's King William (Orchard). Good cropper, pods in pairs; haulm, pods, and peas light green; pods well filled with an average of five peas in each; flavour fair. Height 3 feet 6 inches. Ready for use June 22. Seed round and slightly wrinkled.

(32) Longford Queen (Ward). Good cropper, pods single; haulm, pods, and peas light green; pods long, averaging eight peas in each; of fairly good flavour. Height 3 feet 6 inches. Ready for use June 29. Seed wrinkled.

(33) Boston Unrivalled $\times \times \times$ (Johnson). Heavy cropper, pods in pairs; haulm, pods, and peas pale green; pods large, and well filled with an average of seven peas in each; of large size and superior quality. Height 4 feet. Ready for use June 25. Seed wrinkled.

(34) Pollett's Early Marrow (Pollett). Same as No. 28.

(35) George Cleland (Dobbie & Co.). Moderate cropper, pods in pairs; haulm, pods, and peas dark green, averaging six large sweet peas in a pod. Height 2 feet 6 inches. Ready for use June 27. Seed wrinkled.

(36) The Gladstone $\times \times \times$ (Holmes). Excellent cropper, pods in pairs; haulm, pods, and peas very dark green; pods very

long, often containing eleven peas of large size in each; of fine flavour. Height 3 feet 6 inches. Ready for use June 25. Seed wrinkled.

(37) Compactum (Laxton), (38) Primum (Laxton), (39) Laxton's Possible (Laxton), (40) Early Laxton (Laxton), (41) Thomas Laxton (Laxton), and (42) Laxton's Profit (Laxton). All these varieties were full of promise, but sufficient seed was not received to enable the Committee to properly judge of their merits.

(43) Lord Mayor $\times \times \times$ (Nutting). Great bearer, pods in pairs; haulm, pods, and peas a bright grass green; pods of good size, averaging six large peas in each; of the finest flavour. Height 4 feet. Ready for use June 20. Seed wrinkled.

(44) Stokes's Hero of Trowbridge $\times \times \times$ (Stokes). Profuse cropper, pods in pairs; haulm, pods, and peas light green; pods well filled with an average of seven fine peas in each; flavour excellent. Height 4 feet 6 inches. Ready for use June 23. Seed wrinkled.

(45) Wonder of America (Dammann). Same as American Wonder.

(46) Prince Albert (Dammann). Light crop, and stock mixed.

(47) Express (Dammann). Moderate crop; pods small and peas; deficient in flavour. Height 2 feet 6 inches. Ready for use June 22. Seed round.

(48) Givacrino (Dammann). Poor cropper; pods small, averaging four peas in each; of indifferent flavour. Height 2 feet. Ready for use June 29. Seed slightly wrinkled.

(49) Corata (Dammann.) Stock very mixed.

(50) Caractus (Dammann). Good cropper; haulm, pods, and peas light green; pods well filled, with an average of five peas in each; flavour fair. Height 4 feet. Ready for use June 23. Seed round.

(51) Fascination (Harrison). Heavy cropper, pods in pairs; haulm, pods, and peas light green; pods large, averaging seven peas each; flavour good. Height 2 feet 6 inches. Ready for use June 29. Seed slightly wrinkled.

(52) Early Dawn (Harrison). Moderate cropper, pods in pairs; haulm, pods, and peas very pale green; pods rather short, averaging five peas in each; flavour second-rate. Height 4 feet. Ready for use June 20. Seed slightly wrinkled.

(53) Lord Granby $\times \times$ (Harrison). Profuse cropper, pods in pairs; haulm, pods, and peas light green; pods of good size, containing six large peas on the average; flavour first-class. Height 4 feet. Ready for use June 26. Seed wrinkled.

(54) Veitch's Perfection (Watkins & Simpson). Good cropper; haulm, pods, and peas dark green; flavour excellent; a favourite old variety. Height 2 feet 6 inches. Ready for use June 29. Seed wrinkled.

(55) Improved Telegraph (Watkins & Simpson). Same as the ordinary variety. *See* No. 58.

(56) Rentpayer (Watkins & Simpson). Moderate cropper, pods in pairs; haulm, pods, and peas dark green; pods long and well filled, with an average of seven peas each, and of good flavour. Height 18 inches. Ready for use June 29. Seed wrinkled.

(57) Improved Queen (Watkins & Simpson). Heavy cropper, pods in pairs; haulm, pods, and peas dark green; pods of good size, usually six peas; flavour very sweet. Height 2 feet. Ready for use June 29. Seed wrinkled.

(58) Telegraph (Watkins & Simpson). Profuse bearer, of good quality. A well-known and popular variety. Ready for use June 26. Seed wrinkled.

(59) Veitch's Gold Finder (R. Veitch). Moderate cropper; deep green haulm, pods, and peas; pods short and well filled, with an average of four large peas each; flavour excellent. Height 3 feet. Ready for use June 29. Seed wrinkled.

(60) Notts Excelsior (Yates). Good cropper; haulm, pods, and peas light green; pods short and well filled; flavour very good. Height 1 foot. Ready for use June 17.

(61) Emperor of Japan (Harrison). (62) Unnamed variety (McClure). Seed received late; will be tried again in 1897.

REPORT ON SPINACH GROWN AT CHISWICK, 1896.

THIRTY-THREE stocks of Spinach were received for trial, and were all sown on April 4. In spite of the dry weather the seed germinated freely, and the plants grew well. The result of the trial proved that there are really only a very small number of

varieties, and also that the round dark-leaved sorts are the true Longstanding, and the light-green-leaved are not. Seeds were received from the following donors:—Mr. F. C. Heinemann, Erfurt; Messrs. Watkins & Simpson, Exeter Street, Strand, W.C.; Messrs. Sutton & Sons, Reading; Messrs. J. Veitch & Sons, Chelsea; Messrs. Dobbie & Co., Rothesay; Messrs. Dammann & Co., San Giovanni, Naples, Italy; Messrs. Nutting & Son, 106 Southwark Street, London, S.E.; Messrs. Vilmorin, Paris; Messrs. Barr & Son, King Street, Covent Garden, London; Messrs. Carter & Co., 237 High Holborn, London.

× × × = HIGHLY COMMENDED.

Prickly-seeded.

(1) Large Round Prickly (Heinemann). Ordinary prickly Spinach.

(2) Improved Prickly × × × (Watkins & Simpson). Fine large fleshy leaves; stands well, after the ordinary type has run to seed.

(3) Sutton's Longstanding Prickly (Sutton & Sons). Large foliage, dark green colour, stands well.

(4) Prickly Winter (J. Veitch & Sons). Same as No. 1.

(5) Longstanding Prickly (J. Veitch & Sons). Same as No. 3.

(6) Prickly (Dobbie & Co.). Same as No. 3.

(7) Longstanding Prickly (Dobbie & Co.). Same as No. 1.

(8) Extra large Prickly (Dammann & Co.). Same as No. 3.

(9) Longstanding (Nutting & Son). Same as No. 3.

Round-seeded Varieties.

(10) Longstanding Round (Nutting & Son). The old variety of round-seeded Spinach with light green leaves.

(11) Large Round-leaved (Heinemann). Same as No. 10.

(12) Sutton's Longstanding Round (Sutton & Sons). Similar to No. 20; stock not quite so good.

(13) Longstanding Round (J. Veitch & Sons). Same as No. 12.

(14) Round-leaved Thick Crumpled (Watkins & Simpson). Same as No. 10.

(15) Longstanding Round (Dobbie & Co.). Same as No. 10.

(16) Round (Dobbie & Co.). Same as No. 10.

(17) Round-leaved large (Veitch ; and Dammann & Co.). Same as No. 10.

(18) Lettuce-leaved (Vilmorin). Closely resembles No. 20.

(19) Longstanding late-seeding (Vilmorin). An improved form of the ordinary type.

(20) Longstanding $\times \times \times$ (Heinemann). Large, dark, thick leaves, with a short foot-stalk ; plants dwarf and very productive, with little inclination to run to seed.

(21) Longstander (Barr). Same as No. 10.

(22) Victoria (Dobbie & Co.). Same as No. 12.

(23) Victoria (Vilmorin). Same as No. 12.

(24) Broad Flanders (Dammann & Co.). Same as No. 10.

(25) Round Flanders (Barr). Same as No. 10.

(26) Monstrous Viroflay (Heinemann). Same as No. 10.

(27) Monstrous Viroflay (Vilmorin). Same as No. 10.

(28) New Zealand (Dobbie). Practically a failure.

(29) The Carter (Carter & Co.). Same as No. 12.

(30) Lent à Monter (Vilmorin). Same as No. 10.

(31) A Feuille de Laitue (Vilmorin). Same as No. 10.

(32) Pareseux de Catillon (Vilmorin). Same as No. 10.

(33) D'Hollande (Vilmorin). Same as No. 10.

REPORT ON STRAWBERRIES GROWN AT CHISWICK, 1896.

THE Fruit and Vegetable Committee examined sixty stocks of Strawberries planted in the autumn of 1895. The plants had made good growth generally, in spite of the exceptionally dry winter and spring. No watering or other artificial means to produce any extra good results had been adopted, except a mulch of strawy manure applied late in the season to keep the fruit clean. The rows were 2 feet 6 inches apart, and 18 inches from plant to plant in the rows, a distance which permits full development of the plants, and also free access to gather the fruit. All planted August 29, 1895.

F.C.C. = FIRST CLASS CERTIFICATE.

$\times \times \times$ = HIGHLY COMMENDED.

(1) Hautbois. Small purplish fruit, with white flesh

possessing a rich aromatic flavour; ripe on June 11. A variety worthy of more extensive culture, as the plants crop very well under good culture.

(2) President $\times \times \times$. A great cropper; trusses large and footstalks strong; fruit large, conical in shape, bright red in colour, with scarlet flesh, and very good flavour. Ripe June 11.

(3) Countess. Heavy cropper, with fine bold trusses; fruit long cockscomb shape, darkened in colour; flesh scarlet and firm, with a distinct Pine flavour, and a peculiarly luscious aroma. Ripe June 11. **F.C.C.** June 1896 (Chiswick).

(4) British Queen. Moderate cropper, trusses rather small; fruit large and conical in shape, deep scarlet in colour; flesh white, with a rich delicious Pine flavour. Ripe June 15.

(5) Duc de Magenta. A form of British Queen, but no improvement on the old variety. Ripe on June 11.

(6) John Ruskin. A moderate cropper, with weak trusses; fruit small, roundish, dark red in colour; flesh scarlet, and of poor quality. Ripe June 3.

(7) Wilson's Improved. Light cropper; plants very dwarf; fruit round, small, and dark red, with dark red flesh, and a peculiar acid refreshing flavour. Ripe June 8.

(8) Dr. Morère. Light bearer with a weak habit, producing small, round, scarlet fruit, with white flesh; flavour decidedly poor. Ripe June 11.

(9) General McMahon (McDougall). Indifferent cropper; fruit of fair size, conical in shape, dark red in colour; seeds deeply seated; flesh scarlet; flavour poor. Ripe June 11.

(10) Jennings' White. Crop light; fruit round and small, light red in colour; flesh a creamy-white; flavour only third-rate. Ripe June 11.

(11) Prince Teck. Crop moderately heavy; fruit conical, medium size, dark red in colour, with a light scarlet flesh; flavour excellent. Ripe June 11.

(12) Latest of All (Laxton). Heavy cropper; trusses large and strong; fruit of great size, cockscomb-shaped, dark red in colour; flesh deep red and firm, flavour good. Ripe June 15. **F.C.C.** July 1894.

(13) Triomphe de Paris. Crop light; fruit round to conical in shape, rather small, bright scarlet both in colour and flesh; flavour somewhat acid, but agreeable. Ripe June 11.

(14) Martha Nicaise. Good cropper ; fruit large, conical in shape, with very prominent red seeds ; colour a deep scarlet ; flesh white, with a rich Hautbois flavour. Ripe June 11.

(15 and 35) Aberdeen Late (?) (Bunyard). Moderate cropper, with long conical fruit, deep red in colour ; flesh scarlet, and flavour poor. Ripe June 5, proving the variety to be early, and not late as its name would indicate.

(16) Newton's Seedling $\times \times \times$. Very heavy cropper ; fruit of medium size, firm, deep scarlet in colour, with red flesh, and excellent flavour. Ripe June 15.

(17) George Lesueur. Heavy cropper ; fruit very large, cockscomb or wedge-shaped, dark red in colour ; flesh scarlet ; flavour not good. Ripe June 11.

(18) Wonderful (Bunyard). Good cropper ; fruit large and elongated, bright scarlet in colour ; flesh creamy-white, with a slight Pine flavour. Ripe June 11.

(19) White Knight. Light bearer ; fruit large, light or pale red in colour, with a very white flesh ; flavour fairly good. Ripe June 11.

(20) Princess Royal (Vilmorin) $\times \times \times$. Moderate to heavy cropper ; fruit roundish and of average size, deep red both in colour and flesh ; flavour rich, and very refreshing. Ripe June 11.

(21) Souvenir de Bossuet (Vilmorin). Good cropper ; fruit roundish and deep red, with a pink flesh ; flavour pleasantly acid. Ripe June 11.

(22) Docteur Vieillard (Vilmorin). Moderate cropper ; fruit below the average in size, round in shape, deep scarlet in colour ; flesh red, and flavour poor. Probably an inferior form of the old Keen's Seedling, which it resembles closely in foliage and fruit. Ripe June 5.

(23) Edouard Lefort (Vilmorin ; Letellier). Great bearer, trusses large ; fruit perfectly smooth near the sepals, shape roundish, bright crimson in colour ; flesh light red ; flavour delicious, with a rich Hautbois taste. Ripe June 11. **F.C.C.** June 1896 (Chiswick).

(24) Monarch (Laxton). Heavy cropper ; fruit very large, of conical shape, deep scarlet colour and flesh ; seeds very prominent ; flavour good. Ripe June 10. **F.C.C.** June 1895.

(25, 48, and 49) Acquisition (Laxton) $\times \times \times$. Enormous

bearer ; fruit of great size, somewhat soft, pale red in colour ; flesh red, roundish shape ; flavour second-rate. Ripe June 8.

(26) Unnamed variety (Austin & McAslan). Same as No. 2. Ripe June 11.

(27) Dr. Vieillard (Laxton). Same as No. 22. Ripe June 5.

(28) White Knight (Laxton). See No. 19. Ripe June 11.

(29) Wonderful. See No. 18. Ripe June 11.

(30) Royal Sovereign (Laxton). Great cropper ; fruit large, conical in shape, scarlet in colour, with pale red flesh, very firm, and of good flavour. Ripe June 4. **F.C.C.** June 1892.

(31) Auguste Boisselot. Good cropper ; fruit of nice size, conical in shape ; seeds deeply seated, deep scarlet in colour ; flesh red and juicy with a Pine flavour. Ripe June 11. **F.C.C.** July 1890.

(32) Pioneer. Light cropper ; fruit conical, of moderate size light red in colour, with a deep red flesh ; flavour poor. Ripe June 10.

(33) Duke of Edinburgh. Crop poor ; fruit of fair size, roundish, deep scarlet in colour ; flesh red, and flavour third-rate. Ripe June 11.

(34) Reeves' Eclipse. Crop moderate ; fruit round and rather small, deep red in colour ; flesh also red ; flavour second-rate. Ripe June 11.

(36) Bonny Lass. Crop light ; fruit round and large, with prominent scarlet seeds ; fruit and flesh deep red, firm, and of good flavour. Ripe June 11.

(37) Boule d'Or. Crop moderate ; fruit round and small, deep crimson in colour ; flesh dark red and of inferior flavour. Ripe June 15.

(38) Bridehaugh (McDougal). Fair cropper, fruit large and conical in shape, deep red in colour, with a scarlet flesh ; juicy and of a pleasant flavour. Ripe June 11.

(39) Trollope's Victoria (Bunyard). A failure.

(40) Sir Charles Napier. Heavy cropper ; fruit rather large and conical in shape, seeds very prominent, red in colour, with light red flesh, very firm, and a rich acid and pleasing flavour. Ripe June 10.

(41) Leader (Laxton). Good cropper ; fruit very large, conical or wedge-shaped, bright scarlet in colour, light red flesh, with a poor flavour. Ripe June 11.

(42) Bothwell Bank. Very similar if not synonymous with No. 2. Ripe June 11.

(43) Pauline. Crop very light and practically a failure. Ripe June 10.

(44) Crown Prince. A failure.

(45) Duc de Malakoff. Moderate crop with fine bold round berries covered with prominent seeds ; fruit scarlet in colour with a white flesh, and rich flavour.

(46) Kimberly (Bunyard). A failure.

(47) Hammonia. Crop and fruit very small ; practically a failure. Ripe June 11.

(50) May Queen. Good cropper ; fruit roundish ; dark red in colour ; flesh also dark red ; flavour poor. Ripe June 6.

TRIALS PROPOSED AT CHISWICK 1897.

VIOLAS.—Growers are invited to send to the Superintendent, R.H.S. Gardens, Chiswick, in October 1896, any *Violas* they wish tested, subject to the following rules, and bearing in mind that the object of the trial is NOT to decide on the prettiest individual flower, but to discover the best varieties *for massing in beds or borders* :—

- (a) Six plants (not more or less) of each variety to be sent.
- (b) Not more than 20 varieties from any one grower.
- (c) Not more than two varieties of each self of the same shade or colour. The grower must decide for himself which is his best (or two best) self of any one shade of colour and only send it or the two best at most.

GERMAN ASTERS.—Seeds to be sent as above not later than March 1, 1897.

ANNUALS.—Hardy and half-hardy, carefully distinguishing between the two. Seeds must be sent as above not later than March 1, 1897.

NEW CANNAS.—One plant of each should be sent as above on or before February 1, 1897.

FRENCH BEANS, for forcing.—Seeds to be sent as above on or before January 1, 1897. Not more than six varieties from

any one grower. The merits will only be considered from a *forcing point of view*.

ONIONS.—Seeds should be sent to Chiswick IMMEDIATELY.

The object of this trial is twofold, 1st, to experiment whether autumn sown seeds are more free from the maggot, than others; 2nd, to prove the value of different varieties for standing the winter.

POTATOS.—*New early ones only*. Tubers to be sent as above by February 1, 1897.

The object is to test the varieties with a view to determining the earliest varieties to dig, combined with good cropping and cooking qualities.

PEAS.—*New varieties only*. Seed to be sent as above on or before February 1, 1897.

BORECOLES.—Old and new varieties. Seed to be sent as above on or before February 1, 1897.

Quantities of seeds, &c., to be sent when required for trial at Chiswick.

Broad Beans, Dwarf Beans, Scarlet Runner Beans—Half a pint of seed of each variety.

Peas, Cabbages, Kales, Cauliflowers, Broccoli, Brussel Sprouts, Savoys, Carrots, Celery, Beet, Parsnip, Turnip, Leeks, Lettuce, Onions, Radish, Parsley—Half an ounce of each.

Potatos—20 tubers of each variety.

Tomatos—25 seeds of each variety.

Cucumbers, Gourds, Marrows—Six seeds of each variety.

Strawberries—20 runners of each.

New fruits, &c., one or two trees, plants, or bushes of each.

Flower seeds—Sufficient of each variety of its kind to ensure a fair trial.

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PART II.

THE ROYAL HORTICULTURAL SOCIETY.

By Sir TREVOR LAWRENCE, Bart., President, R.H.S.

[Read at Chester, August 4, 1896.]

THE inhabitants of Great Britain have, during the last half-century, and especially of late years, grown so accustomed to be surrounded by flowers, in town and country alike, that they have come to regard the present state of British horticulture as a matter of course. But no one who carries his mind back to the beginning of the century can fail to be struck by the extraordinary progress which gardening and gardens have since made. It has often been remarked that the world has advanced more rapidly during Her Gracious Majesty the Queen's long and happy reign in all that contributes to the health, comfort, and convenience of life—that is to say, to its happiness—than during the preceding 500 years. While the sciences generally have progressed with giant strides, horticultural science has not lagged behind. During the century now near its end trees and shrubs, annuals and perennials, flowers and fruits, have been introduced from foreign countries in vast numbers; while the abilities of several generations of gardeners have found full scope for their exercise among a garden-loving people in improving old and raising new varieties of

plants and fruits by cultivation, selection, hybridisation, and in other ways.

It was not until the year 1804 that the idea of founding a society to bring together British horticulturists occurred to the mind of Thomas Andrew Knight, F.R.S., a name associated with the Horticultural Society during a long course of years, and ever regarded with the highest honour by all connected with it. Mr. Knight, whose name and virtues are commemorated by the Knightian Medal of the Society, had devoted much attention to scientific horticulture and vegetable physiology, on which subjects he had communicated several papers to the Royal Society. He lived in Herefordshire in the midst of a cider and perry country, and had been struck by the unskilful and unscientific management of the surrounding orchards. He put himself into communication with Sir Joseph Banks, P.R.S.,* the eminent botanist, Mr. R. A. Salisbury, Messrs. Aiton and Forsyth, the royal gardeners, and others; the result being that on March 7, 1804, the new society was founded. Its objects were defined to be "to collect every information respecting the culture and treatment of all plants and trees, as well culinary as ornamental"; "to foster and encourage every branch of horticulture, and all the arts connected with it"; and "to give premiums for improvements in horticulture whenever it shall be judged expedient to do so." In the first paper of the "Transactions" of the new society Mr. Knight says: "The establishment of a national society for the improvement of horticulture has long been wanted; and if such an institution meet with a degree of support proportionate to the importance of its object, if it proceed with cautious circumspection to publish well-ascertained facts only, to detect the errors of ignorance, and expose the misrepresentations of fraud, the advantages which the public may ultimately derive from the establishment will probably exceed the most sanguine hopes of its founders." It is interesting to note that, much as London has changed during the nineteenth century, the meeting at which the Horticultural Society was founded took place on the premises of Messrs. Hatchard, booksellers, 187 Piccadilly, a firm which still

* Sir Joseph Banks, Bart., was President of the Royal Society for forty-one years. He died in 1820. A new edition of his Journals, during his voyage with Captain Cook, has lately been published, edited by Sir Joseph Hooker.

occupies the same premises. The Society commenced work at once, and Vol. I. of its "Transactions" contains numerous interesting and practical papers read before it in 1805 and subsequent years, among them being contributions by Sir Joseph Banks, President of the Royal Society, on "The Introduction of the Potato into the United Kingdom," "The Management of Strawberries," "The Forcing-houses of the Romans," &c.; by Mr. Knight, F.R.S., on "Producing New and Early Fruits," "New and Early Potatoes," "Grafting," "Training Fruit Trees," "Forcing Grapes," "Management of the Onion," &c.; by Mr. Salisbury, F.R.S., on the "Cultivation of the Tuberose," "The Dahlia and its Cultivation," "The Cultivation of Rare Plants," &c.

In 1809 a Royal Charter of Incorporation was granted to the Society, whose object is therein briefly described to be "the improvement of horticulture in all its branches, ornamental as well as useful." The Earl of Dartmouth was nominated first president, Charles Greville first treasurer, and Richard Anthony Salisbury first secretary; the Council comprising, among others, Earl Powis, the Bishop of Winchester, Sir Joseph Banks, P.R.S., W. T. Aiton, gardener to the King, and author of the "*Hortus Kewensis*," and T. A. Knight. In 1812 Volume I. of the "Transactions," previously referred to, was published, though the Society had as yet no local habitation, sharing with the Linnean Society such accommodation as it could offer in Gerard Street, Soho, at a rent of twenty-five guineas. In 1811, on the death of the Earl of Dartmouth, Mr. Thomas Andrew Knight, the founder of the Society, was elected president—a post he occupied for twenty-seven years, to the signal advantage of the Society, and of horticulture generally. Meanwhile the number of Fellows had increased but slowly, and the claims of the Society to the support of all interested in gardens and gardening were hardly recognised. But in 1816 the first bye-laws were passed, and the affairs of the Society ordered on a businesslike footing—practical steps leading to such a rapid increase of prosperity that in 1818 the income was £1,791, the expenditure £1,719, and there were surplus assets valued at £4,400.

In 1818 and the following years an experimental garden was established at Kensington, with a nursery at Ealing; and permanent offices were acquired by the purchase of No. 21 Regent

Street, at a cost of £4,200. About this time the annual subscription, which had originally been £2. 2s., was raised to £3. 3s.; a rise which seemed rather to encourage than to check elections, 845 new Fellows having joined the Society in 1819–21. In 1822 the gardens of the Society were moved from Kensington and Ealing to Chiswick, where a thirty years' lease of thirty-three acres had been obtained from the Duke of Devonshire, the lease being renewed in 1852 for a like period. The gardens of the Society have continued at Chiswick ever since, but their area has been reduced from thirty-three acres to twelve.

A valuable feature of the Society's work—one which has had a great and enduring influence on British horticulture—may well be referred to here. As early as 1818 it was recognised that, funds permitting, a horticultural society could not do better than take steps to obtain from countries beyond the borders of Europe valuable and interesting trees, shrubs, plants, and seeds. The earliest arrivals came from China, through an active and energetic Fellow of the Society, Mr. John Reeves; and from India, through the East India Company. In this way many valuable ornamental plants were introduced into Great Britain, such as Azaleas, Pæonies, Roses, Camellias, Chrysanthemums, &c. One of Mr. Reeves's introductions was the lovely *Wistaria sinensis*, which reached England in 1818. The large tree of this climber at Chiswick is probably a relic of the original introduction. The success of these early efforts encouraged the Society to send out collectors at its own cost. This they did with such success that, to quote Mr. Andrew Murray,* “the results have affected the appearance of all England. Nowhere can a day's ride now be taken where the landscape is not beautified by some of the introductions of the Horticultural Society.” The first collector sent abroad was Mr. Don in 1821: he was accompanied by Mr. Forbes, who, landing at the mouth of the Zambesi, unfortunately succumbed to the climate. In 1823 Mr. David Douglas was employed as a collector on the recommendation of Sir William Hooker, then Professor of Botany at Glasgow. In 1824 and subsequent years Mr. Douglas visited North America down to California, and his explorations bore rich and valuable fruit. Amongst trees we owe to him *Pinus Lambertiana*, *P. insignis*, *P. nobilis*, *P. grandis*, *P. ponderosa*, and

* “The Book of the Royal Horticultural Society, 1862–1863,” p. 15.

last, but not least, the beautiful *Abies Douglasii*; among shrubs, the coloured *Ribes*; and among border plants, *Clarkias*, *Escholtzias*, *Gaillardias*, *Godetias*, *Lupines*, the musky *Mimulus*, *Pentstemons*, and many other universal favourites. Douglas subsequently visited the Sandwich Islands, where he was killed by a bullock. It is unnecessary to refer in detail to the labours of all the collectors who did good work for the Society, though their names should be recorded. Mr. McRae was sent to Brazil and Chili, whence he introduced the *Araucaria*; Mr. John Potts to India and China, and Mr. John Damper Parkes to China in the third decade of the century. In 1836 Herr Theodor Hartweg was dispatched to Mexico, Peru, Guatemala, &c., where he collected a vast number of plants, 2,000 of which have been described by the late Mr. Bentham in his "*Plantæ Hartwegianæ*."

The selection of Robert Fortune as a collector by the Society in 1843 is a memorable event in its history. For not only did he send home many beautiful and valuable plants, but his employment by the Society led directly to the introduction of the great tea industry into India, and subsequently into Ceylon and other countries. This introduction has caused, as is well known, a complete industrial revolution in Eastern Asia, and the transfer of the bulk of the tea trade from China to India and Ceylon, to the enormous advantage of our Indian Empire. It would occupy too much time to give a list of Fortune's introductions; but mention may be made of *Gardenia Fortunei*, *Dielytra spectabilis*, *Wistaria sinensis alba*, *Berberis Fortunei*, *Weigela rosea*, *Jasminum nudiflorum*, *Indigofera decora*, *Cryptomeria japonica*, Moutan or tree Pæonies, &c. It may be mentioned, as evidence of the cost and value of this work, that Hartweg's and Fortune's expeditions alone cost the Society £3,837 from 1841 to 1845. During this period there were distributed from Chiswick 42,584 plants, 31,374 parcels of cuttings, 308,371 packets of seeds. The last collector employed by the Society was Mr. John Weir, who went in 1861 to New Granada, whence he sent several important consignments of Orchids before he unfortunately fell a victim to the climate.

A detailed account of the ups and downs of the Society between the dates of the establishment of its gardens at Chiswick and its move to South Kensington would be tedious and of little interest. It would, however, enforce the lesson that societies, as

well as individuals, if they are to prosper, must stick to their last and cut their coat according to their cloth. No doubt the work undertaken and carried out at Chiswick and elsewhere was beyond the resources which the Society could permanently count upon, and this notwithstanding a voluntary subscription of nearly £7,300 towards the expenses of laying out the Chiswick Gardens. The election of new Fellows, which had been 328 in 1821, steadily declined, due no doubt in part to the imposition of a heavy entrance donation and an increased subscription, these being £6. 6s. and £4. 4s. respectively. Other causes of a decline in the popularity of the Society were the distrust created by a serious defalcation in 1826, and the discontinuance, in 1827, of the annual anniversary dinner—dinners not being so numerous then as to be the unmitigated nuisance they now are. Chiswick *fêtes* or *déjeûners* were established to take the place of the dinner; but after four had been held they made way for the exhibitions in Regent Street and at Chiswick, with which the name of the Society is inseparably connected. It was mainly at the instance of the celebrated botanist Lindley that these shows were established. Lindley, who had been appointed assistant-secretary to the Society in 1822, was ultimately elected a member of council and honorary secretary in 1858. Though the large room of No. 21 Regent Street could hold a display of but very moderate dimensions, it served in those days for the Fortnightly Shows, which have ever been an important and enduring feature of the Society's life.

The first Chiswick show was held in 1833, the last in 1857. It is no exaggeration to say that these displays not only delighted the vast multitudes who visited them, but did much to advance British horticulture, and to guide the efforts of the kindred societies which now flourish in every part of the United Kingdom. Those who can remember these shows at the zenith of their prosperity will readily admit that nothing has ever been seen to compare with them, either in the variety of the collections shown or in the horticultural skill they evinced. A large class of beautiful plants, from the Antipodes, the New Holland plants as they were called, then shown in specimens of great vigour and perfection, have almost gone out of cultivation. Where can anyone now see the beautiful *Pimelias*, *Chorizemas*, *Hoveas*, *Gompholobiums*, *Leschenaultias*, &c., exhibited in such splendour in the

forties and fifties? Where the magnificent Cape heaths, which rivalled them in beauty and perfection of cultivation? Where the striking tall Cacti?

It is impossible to trace, however imperfectly, the history of the Royal Horticultural Society without touching upon the financial vicissitudes, not to say misfortunes, which it has experienced. At an early date not a few Fellows were in default with their subscriptions, and between 1824 and 1855, Mr. Andrew Murray states nearly £13,000 of arrears had to be written off as irrecoverable. For several years between 1840 and 1855 both income and expenditure had exceeded £7,000, though the regular income from subscriptions averaged but £3,000. As long as fine weather and fashion favoured the Chiswick shows, large profits accrued from them, and up to 1851-2 the Council had been able to effect some reduction of debt, large or small, in most years. But fashion is essentially fickle, and the weather which had almost persistently smiled on Chiswick from 1833 to 1846 began to show its seamy side, and the shows to entail heavy losses. It should be mentioned that Mr. George Bentham was secretary from 1830 to 1841, and that Mr. Knight died in 1838. He was succeeded as president by the Duke of Devonshire, who did his utmost to promote the interests of the Society during his twenty years' tenure of office. The Duke added much to the attractions of the Chiswick shows by opening his beautiful grounds adjoining to the Fellows and their friends on show days. It is weary work to follow, however rapidly, the declining fortunes of the Society down to the death of the Duke of Devonshire in 1858, and the election of the Prince Consort as his successor. Suffice it to say that, notwithstanding all possible retrenchments, schemes of reorganisation, the sacrifice of valuable collections of plants at Chiswick, of the Society's herbarium, and of an unrivalled botanical library; notwithstanding the sale of 21 Regent Street and the descent to the occupation of a small office at £80 a year; notwithstanding the discontinuance of the Chiswick shows and efforts to revive public confidence and interest in the Society by exhibitions in the grounds of Gore House and in St. James's Hall, decline and misfortune dogged the Society's steps until, on May 1, 1858, the final crisis came; the number of Fellows being reduced to 985, and there being a debt of nearly £10,000 to face. It was eminently fortunate that even during these dark days Chiswick

gardens were retained and some part of the labour of half a century saved.

Before briefly recounting the more recent history of the Society, I may quote the claims justly advanced on its behalf by the Council in their report of May 1, 1857:—"For more than half a century the Society has endeavoured to pursue the path traced out by its charter. It has examined the qualities, and reduced to order the names, of fruit trees and succulent plants; it has directed the attention of scientific as well as of practical men to the improvement of the arts of cultivation; it has introduced at much cost great numbers of exotic plants to decorate our gardens; it has published many volumes filled with important treatises upon almost every subject in which the gardener is interested; it has formed an extensive garden and orchard, in which have been collected from time to time numerous plants, valuable for their utility or beauty; it has given a great impulse to cultivation by its public exhibitions of garden produce; it has been a school from which have sprung some of the most distinguished gardeners of the century; and it has given away to its Fellows and to public establishments above a million and a half of plants, packets of seeds, and cuttings. In effecting this about £240,000 has been expended, of which £40,000 has been consumed in the creation of the garden; more than £2,000 in forming collections of drawings, models of fruit, &c.; £13,000 in the mere cost of procuring new plants and seeds; while above £20,000 has been directly applied in the form of medals and money prizes for the encouragement of horticulture."

On the election of H.R.H. the Prince Consort as President in 1858 it was hoped, and for a time it seemed, that the Society's difficulties were at an end. Under his auspices a lease of twenty acres of land at South Kensington for thirty-one years was arranged between the Royal Commissioners of the Exhibition of 1851 and the Society, the terms and conditions being embodied in an original and two supplementary agreements, dated 1860 and 1861. By these the Royal Commissioners undertook to spend £50,000 on arcades and earthworks, the Society agreeing to spend a like sum on laying out the garden with fountains, aqueducts, and statuary in the Italian style. Of the £50,000 to be provided by the Society, £10,000 was obtained from donations, life compositions, &c., and £40,000 was raised on debentures. Her Gracious

Majesty the Queen gave a donation of £1,000, the Prince Consort £1,500 in cash and debentures, and many other members of the Royal Family gave encouraging help. The new charter, under which the Society is still governed, was granted in 1861, in which year, on June 5, the formal opening of the new garden by Her Gracious Majesty the Queen, the Prince Consort, and the King of the Belgians took place. On December 14, 1861, the Prince Consort passed away, greatly beloved and regretted. It may have been that the scheme which his fostering care had elaborated and developed contained in itself the germs of decay. It may be doubted whether the resources of the Royal Horticultural Society would have enabled it permanently to bear the charges of a heavy bonded debt, of the maintenance of their South Kensington grounds, and of a costly experimental garden at Chiswick. But when the support and influence, the judgment and guidance, of His Royal Highness, together with the interest and pleasure he took in the work, were lost, difficulties soon began to accumulate. It would be an unprofitable task to refer more than cursorily to these matters. As it turned out, while the Royal Commissioners rarely received any rent for their very valuable land, the Royal Horticultural Society could make no profit out of it, either in money or repute. In the years 1862 and 1871 only—the years of international exhibitions—was the Society able to meet its engagements. A veil must be drawn over the later years of the South Kensington connection ; years marked by disputes between the Royal Commissioners and the Council, attempts to convert the gardens at South Kensington into a recreation ground for the neighbourhood, dissensions in the Council, and growing discredit. The Society dragged on at South Kensington an existence of little use and less dignity or credit up to the end of the year 1887, when a move was made which will ultimately, there is good reason to hope, have the effect of entirely rehabilitating it in public opinion.

It should be mentioned that the Duke of Buccleuch succeeded H.R.H. the Prince Consort as president, and that Dr. Royle, the distinguished author of "*Plantæ Asiaticæ Rariores*," was secretary from 1852 till his death in 1858, when he was succeeded by John Lindley, whose long connection with the Society, commencing in 1822, is in itself enough to make it illustrious.

Before making a few concluding remarks as to the present

position of the Royal Horticultural Society, a brief reference must be made to the publications for which it has been responsible from time to time. The "Transactions" of the Society are contained in ten quarto volumes, three of which belong to the second series. They contain many papers of great interest and value by the most eminent British botanists and horticulturists of the time. Sir William Hooker's name first appears in Vol. I., in 1808; John Lindley's, in 1820, in Vol. IV. The "Transactions" were illustrated by numerous hand-coloured plates, superior in every way to the coarse lithographic illustrations of modern botanical works. These plates still retain their freshness and brilliancy absolutely unimpaired. The "Transactions" were discontinued after the publication of the tenth volume in 1848.

The first series of the "Journal of the Horticultural Society" comprises nine volumes, extending from 1846 to 1855. The first paper is an account of an "Orchideous House" at Penllergare by J. D. Llewellyn, whose son, Sir J. D. Llewellyn, Bart., M.P., is now a member of Council. This series contains numerous papers of much interest. Among the contributors may be noticed Dean Herbert (a contributor to the "Transactions" also), the Rev. M. J. Berkeley, the cryptogamic botanist, Sir J. B. Lawes, Dr. Thompson, subsequently curator of the Calcutta Garden, Dr. Wallich, Sir Robert Schomburgh, whose Venezuelan "line" we are now so keenly discussing, and last, but not least, our great botanist, Sir Joseph Hooker. To this series also Lindley communicated many papers.

After this series had come to an end in 1855 there was a gap of ten years. The current series, of which the nineteenth volume has been published this year, commenced in 1866. It is so recent that little need be said about it. It contains many valuable practical papers, and is indeed a mine of horticultural information. Among its more important contents are the Reports, Proceedings, and Discussions of the numerous "Conferences" which have been held under the Society's auspices, and the Papers read at them. These comprise among others the following: viz., 1884, "Conference on British Apples"; 1885, "Orchid Conference"; 1886, "Primula Conference"; 1887, "National Pear Conference"; 1889, "National Rose Conference"; 1890, "Vegetable Conference," "Chrysanthemum

Conference," "Daffodil Conference," "Carnation Conference," "Fern Conference"; 1891, "Conference on Hardy Summer Perennials and Small Hardy Fruits"; 1892, "Conifer Conference"; 1893, "Begonia Conference"; 1895, "Conference on British-grown Fruit," "Primula Conference." The Society has also published an admirable monograph on "Bulbous Irises," by Professor Michael Foster, F.R.S., and a list of the plants certificated by the Society from 1859 to 1893, extending to 266 pages.

Few words are necessary in dealing with the present position of the Royal Horticultural Society. If it has done anything to retrieve the errors of the past, and to inspire confidence in the future, it has been by sticking resolutely to its last; by bearing constantly in mind that the function of a horticultural society is to promote horticulture; by a successful attempt to clear off all outstanding liabilities, and a fixed determination to avoid debt.

In reducing the minimum subscription to £1. 1s. in 1888, the Society was actuated by a desire to enrol amongst its Fellows as large a proportion as possible of the vast number of their fellow subjects who are interested in gardens. The result of this and other changes has been, on the whole, eminently successful, the average annual net increase in the number of Fellows being 280, the total number 3,300, against a maximum of, so far as can be ascertained, about 2,500 in the old Chiswick show days. The *Journal* is published with regularity, thanks to the unremitting labours of the editors, the Rev. W. Wilks, secretary, and Mr. John Weathers, assistant-secretary. The Committees of the Society include in their several departments a large number of the principal horticultural experts in the kingdom, and their certificates and awards are eagerly sought for, and practically meet with unanimous acceptance. The great shows of the Society, held now for several years in the gardens of the Inner Temple by the continued kindness of the Benchers, have been in many respects the finest ever seen in Great Britain. The Fortnightly Shows are now largely attended, and attract such a number and variety of exhibits as to make it increasingly difficult to find room for them. They are rendered additionally interesting by the valuable papers read before them. The Society's Fruit Show at the Crystal Palace bids fair to become an important annual event. The shows in 1894 and 1895,

with the papers read at them, taught valuable practical lessons both in horticulture and economics. In 1895 the show was visited by considerably over 36,000 people.

For several years the Society has held, concurrently in different parts of the kingdom, examinations in the principles and practice of horticulture, and has granted certificates of three classes to qualified candidates. The numbers presenting themselves at these examinations have been considerable. The Council have long felt that there was difficulty in interesting in its work horticulturists at a distance from London, and unable to visit its shows, meetings, and garden. To overcome this they have devoted special attention to the Journal, and have taken steps to bring local societies into affiliation with the parent society; with the result that there are now eighty provincial societies affiliated. It has been with the same object that invitations have been accepted to send deputations, such as the present, to shows in the provinces; and that efforts are being made to distribute plants and seeds of value among the Fellows, so far as may be done without interfering with the horticultural trade. Finally, the Council have endeavoured to carry out the wishes of the Fellows by putting the garden and plant-houses at Chiswick into thorough order, and by maintaining the grounds there in the best way as a practical and experimental garden. It should be added that the Lindley Botanical Library, consisting of about 4,000 volumes, is in the custody of the Society and open to Fellows. A printed catalogue of it is being prepared.

The Royal Horticultural Society has spent during the ninety-two years of its existence not less than £400,000. That it has made mistakes and wasted money its best friends will not deny. But it may confidently be asserted that it has done, and is doing, good work, which no other society could do—good work of great value to the community. The same may be said of it as was said of Wren, "*Si monumentum queris, circumspice*"; for the introductions of the Society and the lessons it has taught have embellished the land, and smile on the visitor from every park and garden in the kingdom.

Ladies and gentlemen, the hearty thanks of the Society are due to his Grace the Duke of Westminster for his support on this occasion. He was one of those who had promised

£1,000 towards the project of a Horticultural Hall and offices for the Society in London. It is impossible to conclude without tendering to the amateurs and to the horticultural trade of the kingdom the warmest acknowledgments of the Society for the hearty and unfaltering support they have ever accorded to it in days of adversity, no less than in those of prosperity.

GARDEN CRAFT.

By the Very Rev. S. REYNOLDS HOLE, Dean of Rochester.

[At Chester, August 4, 1896.]

WHEN a benevolent florist said to me that he wished every man in England to have a garden of his own, and I made answer, "Heaven forbid!" I was surveyed with a pitiful disdain. "Because," I continued, "three-fourths of the recipients would abuse the gift. A large portion of your gardens would be ultimately covered with groundsel, like his who did not think it right to prejudice the soil in favour of strawberries. If you will modify your benevolent suggestion, and express it thus, 'I would that every man who loves a garden had a garden to love,' why then with heart and voice I will sing a sevenfold Amen."

Alas! for this toilsome, weary world,

By suffering worn and weary,
Yet beautiful as some fair angel still,

the love of a garden, though it is, as Lord Bacon wrote, the purest of human pleasures and the greatest refreshment to the spirit of man, is rare, very rare, among us.

And yet it is innate, a sad memory of *Paradise Lost*, or a glad prevision of *Paradise Regained*, in us all. There is a tradition in my family that in my early babyhood I seized and plucked, with an admiration which was almost ferocious, an artificial rose from the Sunday bonnet of my nurse. And who does not remember how by the stream and in the mead, in the lanes and in the woods, we cherished with a like fatal affection in our warm little hands the violet and the primrose, the campion,

the honeysuckle, and the wild hedgerow rose? Who has forgotten the cowslip-balls and daisy-chains?

And by the brook, and in the glade,
Are all our wanderings o'er?
Oh! while those dear ones with us stayed
Would we had loved them more.

And our little flower-beds, in which we sowed pippins and planted twigs, and expected apples and trees next day. Hard by, the cemetery, in which a beloved white mouse was solemnly interred, with a cigar-box for a coffin, and the dinner-bell tolled at intervals!

Fascinations follow, which, like the Baron all covered with jewels and gold, attract our affections so light and so vain, and lure us from our first love. Although "the goddess Diana, sir, who calls aloud for the chase," may be "as partickler in her behaviour as Miss Sophie Wackles," she does not hesitate to beguile us from our loyalty to Flora; and the jumping pony and the new gun, the fishing-rod and the bat, seem to monopolise our leisure hours and to exclude all other recreations.

Such is the rule, and happy are the exceptional few who retain amid these later excitements that appreciation of a garden which makes our homes more beautiful and our lives more bright; or who, having lost it awhile, are mercifully restored (as I was more than fifty years ago, on leaving Oxford) to a better mind.

Once for all—for when this love of a garden possesses us in our maturer years, it leaves us only with life.

The love of field sports comes and goes. There is a time when the big stile, and the broad stream, and the high wall and the awkward double seem to warn us, as sermons in stones and books in the running brooks, that for the sake of others, in consideration for our kinsfolk and friends, for the best interests of the country, as husbands, as fathers, as members of the County Council, we are forbidden to submerge ourselves in watery graves, or to dislocate our spinal cord. Personally, we should revel in the risk, but we can no longer disobey the stern voice of Duty, which commands us, as parents and patriots, to remember our responsibilities and go at once to the gate.

Too soon the time comes when that rocketing pheasant crows derisively, as your shot passes three feet behind his tail; when the

cricket-ball hits you more frequently than you hit the ball, when the bails are off before the bat is down, and the impudent spectator, as you miss the catch, makes derisive inquiries as to the price of butter.

Yes, we lose our zest for these diversions on flood and field, but the love of a garden, like Tennyson's brook, goes on for ever. Age cannot wither it, nor custom stale its infinite variety. That grand old gardener, Thomas Rivers, of Sawbridgeworth, said to me, "You will gradually lose your enjoyment of those pastimes which require great strength and agility, but your love among the roses never."

It is not only that "a thing of beauty is a joy for ever," but

Its loveliness increases ; it will never
Pass into nothingness, but still will keep
A bower, quiet for us, and a sleep
Full of sweet dreams and health.

Nature never did betray
The heart that loved her. 'Tis her privilege
Through all the years of this our life to lead
From joy to joy.

Intermediate between those who have lost and those who have retained or recovered their love of the beautiful, there is a mixed and miserable multitude which pretends that it is fond of flowers. Their perceptive powers are just strong enough to acknowledge the attractiveness of form and colour, and to allow that a garden is "the sort of thing which a fellow must have, don't yer know." I feel for them as I feel for the blind, hoping, so long as they keep silence, that they are conscious of their ignorance, and are anxious not to expose it; but when, emboldened by the possession of a conservatory or a few thousand plants for bedding out, or in imitation of some noble neighbours, who are devoted to their gardens, they suddenly lay claim to a like enthusiasm, why then the milk of human kindness is apt to turn a little sour. These pseudo-florists have no more resemblance to the true philanthist than a schoolboy's kite to a flying eagle, or a tin soldier to a lifeguardsman; and yet they have the effrontery to tell you that they are awfully gone on gardens in general, and would give anything in the world to see yours in particular; and when you invite them, good, easy man full sure, and they come to see, they won't even look at your

favourites, but begin to talk about the big wheel at Earl's Court, or Marshall and Snelgrove's summer sale, or Gwendolen's baby, or Charley's aunt, or the Pope's encyclical, or the Eton and Harrow match.

In the garden, as elsewhere, this development of genteel humbug may be contemplated in manifold forms—in those who tell you that they dote upon flowers, but only care for such as are rare and costly, or promise to win prizes at the show; in those who limit their admiration to one flower only, and ignore the rest; who only desire them as decorations for their tables, or as exciting outside their windows the admiration of their neighbours in the square; who regard them without gratitude and reverent love towards Him “Whose breath perfumes them and Whose pencil paints,” who have never a thought of Him Who said, “Consider the lilies of the field, how they grow, they toil not, neither do they spin: and yet I say unto you, That even Solomon in all his glory was not arrayed like one of these.”

Let us “ring out the false, ring in the true,” and leaving pretence for reality and shadows for substance, let us consider what help we old gardeners can render to those who have our zeal but not our experience.

What is meant by Garden Craft? The art surely of obtaining the greatest possible enjoyment from our garden by making it a place which shall refresh our spirit with its restful quietude, and delight our senses with its graceful outlines, its varied colours, sweet fragrance and singing birds. It should be a place of reverent admiration, cheerful exercise, happy intercourse, tender memories, immortal hope.

How is this art, this craft, to be acquired? Manifestly it is impossible, seeing that gardens vary so largely in site, and soil, and size, to give special or minute directions, but there are certain general rules which are for universal obedience, and which, like the laws of the Medes and Persians, alter not. There should be, as far as possible, a correspondence, an adaptation of the garden with its surroundings. Horticulture, architecture, and agriculture should blend in triple alliance, by gradual accommodation producing uniformity without formalism, a concert of many instruments in perfect harmony, a combination

Where order in variety we see,
And where, tho' all things differ, all agree.

And so the terraces, with their walls and steps and balustrades, adapt themselves as pleasingly to the front of a palace as the simple little porch of laurel and honeysuckle to the lowly cottage door.

This happy coalition between horticulture and architecture, the garden and the home, will be gracefully promoted by adorning the walls of the house with the flowers and foliage of climbing plants, such as the *Ampeilopsis Veitchii* and the *Clematis* (I name them together because they will grow in a very charming conjunction), the *Wistaria*, the *Passion Flower* (*Lady Constance*), the *Ivies*, *Simmonds' Cotoneaster*, *Honeysuckles*, not omitting *Aureo-Japonica*, *Bignonia*, *Escallonia*, such *Roses* as the *Banksian*, the *Ayrshire*, and *Sempervirens*, *Gloire de Dijon* and her daughter *Madame Berard*, *Rêve d'Or*, *Reine Marie Henriette*, the hybrid *Chinas* and *Bourbons*, *Blairii II.*, *Charles Lawson*, *Paul Perras*, and, on a warm wall, *Fortune's Yellow*. I hardly dare to include the *Magnolia*; its loss is so deplorable, and yet " 'tis better to have loved and lost than never to have loved at all."

Between horticulture and agriculture the diversities may gradually disappear by the planting of shrubberies and trees, and by passing from the highly cultivated to "the wild" garden.

And what shall the gardener put into his garden? All things pleasant to the eye and good for food for which there is room and which will thrive in it. It must be such as Tennyson describes:

The daughters of the year,
One after one, through that still garden passed,
Each, garlanded with her peculiar flower,
Danced into light, and died into the shade.

The Christmas Rose (so precious under the handglass laden with snow), the *Aconite*, the *Snowdrops*, of which Keble sang:

They twinkle in the wintry morn,
And cheer the ungenial day,
And tell us all will glisten soon
As bright and green as they.

And then the *Crocus*, like the cohorts of the Assyrians, all gleaming in purple and gold; the *Scillas*, including the exquisite *Chionodoxa Lucillæ*, the splendid scarlet *Anemone*; and then

The Daffodils begin to peer,
And then comes in the sweet o' the year.

Emperors and Empresses, the Duchess of Westminster and Sir Watkin Wynn; the Hyacinths and Tulips, the long series of lovely Iris, beginning with Bakeriana and Reticulata; then the Pæonies, the Roses, the Larkspurs, the Poppies, Pyrethrums, Phloxes; the Carnations (I have to express my gratitude to the Messrs. Dickson, of Chester, for the popularity conferred on my wife, "Mrs. Reynolds Hole," which made her "the *pink* of fashion," even in the buttonhole of princes), and beside all these "an innumerable company of angels"—are not our flowers the fairest messengers of our heavenly Father's love?—and then the Lilies and Cannas, Gladioli, Daisies, the Hollyhocks and Helianthus, Asters, Dahlias, and hardy Chrysanthemums; and we return once more to our Christmas Rose, mourning the absence of our beloved, and singing dolefully, "Tell me, shepherds, have you seen my Flora pass this way?" though we know, and the shepherds know, that she never comes out in the snow.

I may not forget the flowering trees and shrubs, the Lilacs, the Laburnums, the charming *Malus floribunda*, with its tiny fruit, suggestive of a doll's dessert or a pomological show in Liliput, the Ribes, *Pyrus japonica*, the *Prunus Pissardi*, with its bright white flowerets amid its rich bronzy leaves, the blue *Ceanothus* "Gloire de Versailles," Forsythias, Weigelas, white, pink, and scarlet Thorns, the Almonds, the Cherries, and the Crabs, the Brooms and Gorses, the Azaleas and Rhododendrons, the Syringas, Cistus, Daphnes, Indigoferas, and Spiræas.

Nor can I omit the "Annuals." We must have our Sweet Peas, of which there are now such exquisite varieties, our Mignonette, and Stocks, *Dianthus*, *Godetia*, *Phlox Drummondii*, *Saponaria*, *Salpiglossis*, Sweet Sultan, and a bevy of fair companions, as bright and beautiful as they.

And what shall I say about that system of floriculture which goes by the name of "Bedding Out"? I have already said a good deal and written a good deal against it, because I have seen the great harm which it has done in so many of your gardens, by the expulsion of flowering shrubs and our favourite hardy flowers to make way for geometrical beds of more brilliant hues, or tender plants, which were at the mercy of a thunder-storm; which left an unsightly display of bare soil, when they were removed in autumn, and occupied a large portion of the

gardener's time and glass for their annual multiplication. I speak from personal, shameful experience, because—

In my sallet days,
When I was green in judgment,

when I would not heed the caution

O formose puer, nimium ne crede colori,

I offered sacrifice to this gaudy idol, and, like a daddy-long-legs hovering round a lamp on a summer's night, was scorched by the dazzling flame.

Nevertheless, when there is space, and taste, and money, these bedders-out are introduced on those plateaux and terraces of which I spoke in front of palaces, and castles, and great mansions with admirable effect, and the graceful combinations which we see in the parks of London never fail to refresh and charm. They may also be effectively arranged here and there on the borders of shrubberies; but the huge spaces which they sometimes occupy in kitchen gardens, with long lines of brilliant colours, suggesting such a ribbon as a lady in Brobdingnag might have selected for a sash, would be far more satisfactorily occupied by a border of herbaceous plants. They are too gorgeous these dazzling displays, and I recall the smiling assent of a brother gardener when, after we had been more than satisfied with one of these splendid scenes, I suggested that "we should go among the vegetables and cool our eyes on the lettuce."

Were I asked to name the best of these flowers for beds, I should select, first of all, the Begonia in varied colours, the Clematis, light and dark, Cannas and Lilies intermixed.

As to the arrangement of a garden, Pope has given us all the information we require in two simple lines:

He wins all points, who pleasingly confounds,
Surprises, varies, and conceals the bounds,

instead of exhibiting all he has at once, as is the case with the owner of a small garden, who makes a large display of bedding-out, or where there is a straight gravel walk on the four sides of the grass plot with a narrow border on three sides between walk and wall, and the house on the other.

The garden next your admiration calls—
On every side you look behold the wall!

No pleasing intricacies intervene.
 No artful wildness to perplex the scene.
 Grove nods at grove, each alley has its brother
 And half the platform just reflects the other.

So that the sarcastic old gentleman when it was said to him, "Shall we go and have a look at the garden?" was justified in his reply, "Oh, thanks; I can see it here."

I love best the old English arrangement—clumps of trees and shrubs, bordered by flowers of diverse shapes and at irregular intervals, so that you can have a continual change of form and colour, light and shade—a garden where we may read or think in unobserved and unmolested peace; in which children may play at hide-and-seek, without being as conspicuous as Royal Charles represented on the sign of the public-house in his crown and robes about half as large as the oak; a garden in which lovers can gaze upon each other, with other signs of endearment, without being pestered by brothers and sisters who are watching from the window of the house.

If his garden is large, I would advise the young gardener to choose from his general collection some flower which seems to succeed more than others in his soil, and to make them a speciality in his garden, Roses, for example, or Lilies, Iris, Narcissus, Carnations. At all events let me advise him to cultivate most largely those flowers which thrive with him best, and not to persevere with those which assure him by continual failure that they dislike either the site or the soil. Few spectacles are more depressing than the skeletons and cripples which we sometimes see in a garden—the Rhododendron, for example, "lank and brown," moribund in a cold clay soil.

If he has a few large stones within reach, let him order my friend William Robinson's little book on Alpine flowers and make himself a rock-garden. In no other form can he obtain so large a delight from so small a space. If he

Spake full well, in language quaint and olden,
 One who dwelleth by the castled Rhine,
 When he called the flowers all blue and golden,
 Stars, which on earth's firmament do shine,

here he would behold a constellation. Surely the rock-garden, if it be well cared for and kept from weeds and slugs, is a fascination to the florist in the sweet spring-tide. It is

A miniature of loveliness, all grace,
 Summed up and clothed in little.

What can be more delectable than the silvery and roseate Phloxes, the Sempervivum with the spider's web, the glowing Gentian, and a hundred more? The smallest garden may have its little Alp, and the largest can have nothing more beautiful than the rock-garden at Kew, or that triumphant combination of Nature and Art, the most perfect form of an Alpine garden which I have ever seen, in the nurseries of Messrs. Backhouse at York.

And I would note here, referring to collections large and small, that, whenever the gardener really loves his garden and his craft, he has the same amount of enjoyment. I venture to assert that a window plant may give as much satisfaction as the most costly Orchid to its owner. I know that there are no more earnest or successful gardeners in England than the artisans of Nottingham in their little plots outside the town. Yes, He who has given to all alike the admiration of the beautiful has given us this beauty to admire. The Giver of all good gifts is no respecter of persons, but He designed the pure light, and the pure air, and the pure water, and all things pleasant to the eye, and good for food, for all. He maketh His sun shine on the evil and the good, and sendeth rain upon the just and on the unjust, whether they will use or abuse His gifts. Happiest of men are they who act as God's almoners in the distribution of these gifts. Most miserable of men are they who would withhold or pollute. When I was in Baltimore an incident was related to me which occurred at a dinner party in that city. George Peabody was present, and was asked by one of the guests whether he derived gratification from his donations in proportion to their munificence. He replied that for a time he had a disinclination to give away money, but that as he grew richer he felt more and more the duty of helping others. "Finally," he said, "I determined to make an experiment on a small scale, and so I built the first of the model tenement houses in London. It cost me a great effort, but when I went some time afterwards, and saw the improvement in comfort and cleanliness and health, I was delighted and encouraged to do more, and now I do not hesitate to say that, much as I enjoyed making money, I have far more enjoyment in giving it away." He found the true happiness of making others happy.

And part of that happiness was in their window-plants, for

when, some years after, I went to a Flower Show for poor gardeners in Dean's Yard, Westminster, the principal prizes were won by the occupants of "Peabody's Buildings," and to George Peabody, and to all others who seek to make more homelike the houses of working men, let us award first prizes for garden craft.

The weary woman stays her task
 The perfume to inhale;
 The pale-faced children pause to ask,
 "What breath is on the gale?"
 And none that breathed that sweetened air
 But had a gentle thought—
 A sense of something good and fair
 Across the spirit brought.

Other interesting supplements might be added, such as a collection of Japanese plants, the Maples especially, some of which I prophesy will hereafter, like many other importations from Japan, be established in our gardens, to the satisfaction of the purchaser who ran the risk, and to the envy of those who "Let I dare not wait upon I will." I speak from hopeful experience of specimens which outlived the winter of 1894-95 in my Midland garden.

Reverting to my visit to America, I saw near Albany a collection which had been made by a lady after reading "The Plant-lore of Shakspeare," by our famous fellow-craftsman, the Rev. Canon Ellacombe. A small slip of our common English Gorse, anxiously nursed in a pot under glass, first amused me, and then suggested to an old sportsman melancholy regrets on the impossibility of establishing in America the best of all coverts for the fox!

In Shakspeare's own county, at Warwick Castle, there is, I am told, a most interesting collection of the flowers mentioned in his works, accompanied by quotations.

There may be a garden of sweet odours, a collection of the most fragrant flowers, such as I remember in the grounds of one of our Nottinghamshire squires, to whom, their devoted admirer, they offered, when he had lost his eyesight, the only solace they could bring.

A collection of plants having beautiful foliage: the Acanthus, Golden and Silver Hollies, Euonymus, Bamboos, Eulalias, Grape-vines.

There is the *Garden of Friendship*—of plants given to us by our friends ; the *Garden of Memories*—of places visited, and of interesting events ; and when there are plantations adjoining there should be what is called “The Wild Garden,” by which I mean the planting in open spaces here and there of such flowers as are most likely to flourish. Again I must refer to a book on this subject by my friend, and dedicated to me, William Robinson. An infinite number of lovely plants may be thus introduced, to the continual surprise and delight of the rambler : Roses, Honeysuckles, Clematis, Spiræas, Lilacs, Laburnums, Cherries, Crabs, Thorns, and at intervals bright patches of flowers, bulbous and perennial. Every garden must have its fernery, large or small.

Let me utter, in conclusion, a few words of warning to the younger disciples. Don't be too anxious to improve Nature, or you may impoverish instead of enriching creation. Beware of incongruities, beware of brickdust, powdered gypsum, clinkers, and bottle-ends. I am fond of sailors and of ships, but the figurehead of Nelson in a cocked hat, or of Britannia in a helmet, or of a mermaid, with immense blue eyes and flowing hair, set up in a garden, seem to me about as appropriate as a lighthouse in a millpool ! I once saw in a tea-garden near London the imitation of an *Araucaria imbricata* in cast iron, and painted a gaudy green. I felt indisposed ; and I am sure that, if I were inadvertently to swallow poison, the glimpse of that *Araucaria* would be the most powerful emetic I could find. Such monstrosities are as hideous as the heraldic animals, on poles painted with the Tudor colours, which King Nebuchadnezzar—I beg pardon, King Henry the Eighth—set up in his garden at Hampton Court. The ships of the Wise King went to Tarshish, and, once in three years, they came back and brought, with other treasures, apes and peacocks ; but Solomon, I am convinced, was too good a gardener, for he spake of trees from the Cedar Tree which is in Lebanon unto the Hyssop which springeth out of the wall, to copy them in clipped Yew.

Statues should be used abstemiously. When their Roman noses begin to crumble, and their togas are covered with moss, and irreverent boys adorn them with billycocks, they do not embellish the scene.

Be cautious with regard to artificial water ; beware of mud banks and stagnant waters.

Be generous. Freely ye have received ; freely give duplicates, roots, cuttings, pipings, buds, and seeds.

Promote that reciprocity and sympathy which you will find in all true florists. I have had and have "troops of friends," royal and rough, high and low, rich and poor, social, ecclesiastical, literary, artistic, sporting (I followed foxes and partridges for more than half a century), but I have found no class of men more genial or more generous than those who love their gardens. I once asked the head gardener, in the absence of the owner, of one of the most beautiful gardens in England whether I could walk through the grounds, and I added that my name was Hole. And when he inquired "Mr. Reynolds Hole?" and I replied in the affirmative, I was first of all astonished by the abrupt manner in which he turned his back upon me and then elated by the words which he spoke to one of his subordinates, "John, set the fountains playing!" And a few thousand miles away on the other side of the Atlantic there was scarcely a city in which we were not welcomed by florists, scarcely an hotel in which we did not find some boxes of beautiful flowers. The love of gardening makes the whole world kin.

I ask those who know much more of gardening than I do, to pardon, for the sake of those who know less, suggestions which may have seemed to them prolix, superfluous ; and I desire to offer my most hearty thanks to all for the kind, patient sympathy with which they have listened to my words.

GARDEN LITERATURE.

By Mr. F. W. BURBIDGE, M.A., F.L.S., F.R.H.S.

[Read at Chester, August 4, 1896.]

"They set great store by their gardiens." Sir Thos. More (Lord Chancellor), 1480-1535.

WE are told that "words make haste to follow things," and so there must have been gardens before books about gardening appeared. The art or craft of gardening has existed in some form or other from the earliest and rudest times. The most

imperative and primitive of all desires, viz. those for food and medicine, were doubtless those that prompted the earliest experiments in gardening. Our first parents are said to have lived in the first garden, and no doubt one situated in a more genial clime than ours; but of one thing we may rest assured, viz. that in all ages and in all countries gardens have existed side by side with the earliest evidences of refinement and of civilisation.

So far as our own land is concerned, we find constant references to Kale-yards, Garths, Herbaries, Orchards, and Cherry-yards in old records, in chronicles, chartularies, and leases, wherever such records have been preserved. There is ample proof of the existence of gardens in England from very early times, but its literature is very scanty until we reach the middle of the fifteenth century and the printing press appeared; then Bibles and herbals come in a continual stream.

As a matter of course agriculture and horticulture had really existed as an unknown quantity in England at least from the date of the Roman invasion, during and after which time our native fruits and vegetables were augmented by better kinds from Southern Europe and even from Western Asia. Again, there were Orchards and Cherry-yards, in feudal times, outside the castle walls, and herbaries inside for choice herbs and fruits and vegetables and flowers; and after the Conquest, the Norman-French, who were used to such luxuries at home, would naturally wish to augment the supplies they found then existent in England.

In Domesday Book (p. 127) not only are private houses with their gardens recorded, but at Fulham, in Middlesex, still a market-garden centre, eight cotarii and their gardens are enumerated. The Crusaders are also credited with adding materially to our garden stores by collecting and bringing home useful and beautiful plants they had met with on their return from the Holy Land.

In the reign of Henry II. (1154-1189) the gardens of the citizens of London are described by Fitzstevens as being large and beautiful and fertile "to a degree."

From the introduction of Christianity up to the Reformation the best gardeners were those who lived quietly and peaceably in the monasteries and other great religious houses, as at Ely,

Norwich Priory, and the great Abbey at Abingdon.* The monks had communication with Italy, France, and Spain, and through them our gardens must have gained much in many ways ("Hist. Gardening in England," p. 8).

Although we had no real gardening books until the middle of the fifteenth century, the art itself, as I have already hinted, had long been practised, and this more especially in Southern and Western England. The following extract from records of the fourteenth century, in the Guildhall Library, throws a very interesting side light on gardening in and near London in the time of Edward III.

"Previous to 1345, the gardeners of the Earls, Barons, Bishops, and Citizens of London had a market for 'pulse, cherries, vegetables, and other wares' on a plot of ground opposite the Church of St. Austin, near the gate of St. Paul's Churchyard. This market grew and became so crowded and noisy as to interfere with passengers, and the 'scurrility, clamour, and nuisance of the gard'ners, and their servants became so obnoxious to reputable people dwelling near, and so annoying to the priests, clerks, and laymen, singing matins and mass in said Church of St. Austin, that the mayor and aldermen were petitioned to interfere and abate the nuisance as we should say.'"

The market was eventually restricted, but seems to have been but little more seemly than before. This paragraph also shows us that the present-day market gardening is no new thing, but really a respectable old institution.

Fruit culture especially seems to have received a great stimulus in Tudor times, since it is recorded that Harris, gardener and fruit-grower to King Henry VIII., obtained great store of grafts of Apples and Cherries, &c., from France and the Low Countries, not only for the king's own gardens at Hampton Court and elsewhere, but with which to originate and plant the orchards now so famous in Kent and Surrey. Harris is described as of London, though he is said to have been "borne in Ireland," and he rented seven score acres of ground from his royal master at Tenham in Kent, and planted it with choice and lasting fruits. Woolf, a French priest and gardener to Henry VIII., travelled on the Continent and introduced Salad Herbs, Apricots, Musk Melons, and fine Cherries to the gardens at Nonesuch, near

* The garden accounts of Norwich Priory from 1340 to 1529, and those of Abingdon Abbey from 1369 to 1370, have been preserved (v. "Hist. of Gardening," p. 9, Amherst).

Cheam in Surrey, about the year 1524 (*v. Gough's "Brit. Topog.," v. i. p. 133.*)

After the year 1500 all our records go to prove that the evolution of gardening and of gardening literature went on side by side, each acting and reacting most beneficially on the other.

Our garden literature may be said to have originated from two springs or sources at about the same time, and was of no great or public importance until printing furnished thought with wings, and books became common objects of commerce, and then, as D'Israeli tells us, the treasures of the human mind became "as free as air, and as cheap as bread." Then came the earlier Latin or French translations, and the Herbals such as Macer's in 1487, the Great Herbal 1526, and Ascham 1550. These Herbals in the main dealt with plants from a botanico-medical point of view, but they collectively exerted a most beneficial influence on the rise and progress of English gardening, seeing that the care and attention devoted to the growth of Herbs or "simples" naturally led to the culture of many other useful and beautiful things. We can see that this really was the case by studying the evolution of the Herbals themselves. At first purely astrologo-medical and pedantic, they alter gradually until in later years we find those of Gerarde, Johnston, and Parkinson becoming more essentially horticultural in character. It is to Herbals and to Cookery Books that we must look for vivid side-lights on early gardening.

In the late sixteenth and early seventeenth centuries not only gardening proper, but its literature, had become firmly and extensively established. So general had become the taste for and interest in horticulture, that men of leisure and of literary talent directed their ability to its literature, collected information at home or abroad, and gave the results for the public benefit. This is a decisive proof of the attention aroused, for no author would have written a book, and certainly no publisher would have printed it, unless readers were also expectant and expected, and no one would read a work on plant culture for mere amusement, so that there must have been a demand from those who wished to practise what they read.

But the earliest of all garden works are in MS., and no doubt there are many MS. works on our craft actually in existence, if they could be found and edited for more general

perusal. Neckham, of Cirencester, and Grossheade, of Lincoln, both wrote on gardening prior to 1250, and Felton mentions Alfred the Philosopher, "an Englishman much respected at Rome," as being one of our earliest authors on gardening. Alfred is said to have died in 1270, and left amongst other MS. one on vegetables, which now appears to be unknown. Perhaps one of the very first works on the cultivation of our native soil after Grossheade's was written in the reign of Edward III. (*i.e.* before 1377), by Walter de Henly, entitled, "*Yconomia sive Housbrandia*." This work is mentioned in Pulteney's "*Sketches of Botany*," and Bishop Tanner, who had seen the manuscript, thought the subject well treated after the manner of the time. Again in 1379, or thereabouts, Henry Daniell, a Dominican, left a manuscript on herbs and fruit trees. Pulteney* gives a list of several manuscripts as existent in the Bodleian Library and elsewhere, and states that he could easily have extended the list, only that it would have out-swelled the article he was then writing. Some of these MSS. may prove to be mere translations from the Latin, but others may be original and well worth bringing to light; and I hope some one with leisure will undertake a search amongst the buried treasures in our best and richest libraries, and do for the really English MS. literature of gardening what has already been done by several authors hereafter to be named for its printed books.

But apart from MS. gardening books that reached us from Europe either in Latin or as translations into English, we had a native spring—a spring that has never run dry. One of the best known MS. works on gardening in English is a complete manuscript of five pages ($12\frac{1}{2}$ in. \times $4\frac{1}{2}$ in.) in the library of Trinity College, Cambridge. It is entitled, "*Mayster Jon Gardener*." The actual identity of the author or dictator, as the case may be, is not known, but he was undoubtedly a sound, practical gardener, and one who for the period was singularly free from superstitious beliefs in astrology, and other fancies current at that date.

The early poetic work alluded to commences thus:—

Ho so wyl a gardener be
Here he may both hyre and se

* "*Historical and Biographical Sketches of the Progress of Botany*." London, 1790.

Every tyme of the year and of the mone
 And how the crafte shall be done
 Yⁿ what maner he schall delve and sette
 Both Yⁿ drowth and Yⁿ (the) wette
 How he schall hys sedys sowe
 Of every moneth he must knowe
 Both of wortys and of leke
 Ownyns and of garleke
 Percely, clary, and eke sage
 And all other herbage.

At the conclusion, under "Saferowne," the last four lines are as follows :—

W^t a dybble pu schalt ham sette
 That pe dybble before be blunt and grete
 Three ynches depe they most sette be
 And thus sayde Mayster Jon Gardener to me.

The directions throughout are clear and reasonable, and set forth in a rude rhyme ; and the last line of all, viz. :—

And thus sayde Mayster Jon Gardener to me,

may suggest that the writer was a scribe merely, and not the actual author. The headlines or cross-titles to the parts or divisions of the piece, and indicating the contents, are in a later hand, such as "The Feate of Gardening," "Of Settyng and Reryng of Treys," "Of Graffying," in which place he says of Pears, you are to "graffe hym apon a Hawthorn." There are chapters on the "cuttyng and settyng of Vynys," "of settyng and sowyng of Sedys and Wurtys," "of Perselye and other maner Herbys, and of the kynde of Saferowne." The probable date of this MS. is 1440-1450, and it may be taken not only as our best early English (*i.e.* written in English) work on gardening, but also as the prototype and precursor of such rhyming works as Tusser's "Husbandry," and it was also a forerunner of the early calendars on gardening. This MS. has been transcribed in full and annotated, by the Hon. Miss Amherst (to whom we are all indebted for her valuable "History of Gardening in England"), and it may be found in "Archelogia," Vol. 54 (Part I.), pp. 157-172. There is a small quarto treatise of two pages only on gardening of about this date (1450) by Nicholas Bollar, or Bollardo, in the British Museum (B.M. Sloane MS. No. 7). Bollar is described by Johnson as an Oxonian of skill, and it is probable that he

belonged to some monastic order of about the middle of the fifteenth century.

As early as the year 1500 there was a "Boke of Husbandry" actually printed in London by Wynken de Worde. It is a quarto of twelve pages only. It commences, "Here begyneth a Treatyse of Husbandry, which Mayster Groshede, sometyme Bisshop of Lyncoln, made and translated out of Frensshe into Englysshe, whiche teacheth all maner of men to governe theyre Londes, Tenements, and Demenes ordinately." It concludes with, "Here endeth the Boke of Husbandry and of Plantynge and Graffynge of Trees and Vynes." Although not printed until the year 1500 this work had been written or translated by Grossheade prior to 1250.

LIST OF PRINCIPAL AUTHORS AND PRINTED WORKS ON GARDENING.
1500 TO 1860.

1500. Boke of Husbandrie. W. de Worde.	1705. Bradley, Kensington; Fairchild, Hoxton.
1516. The Great Herball. French.	1714. John Lawrence.
1521. Arnold's Chronicles.	1715. Stephen Switzer.
1530. Macer-Linacre. Damask Rose.	1724. Phillip Miller.
1532. Fitzherbert's Husbandry.	1754. Justice.
1550. Ascham's Herball.	1763. Prof. Martyn.
1563. Hill's "Howe to dress, sowe, and sette a garden."	1767. John Abercrombie.
1557. Tusser's "Husbandrie."	1777. C. Loddiges. Great Nursery, Hackney.
1565. Bulleyn.	1787. William Curtis, Garden Botanist. Bot. Mag.
1568. Turner's Herball.	1790. Pulteney. Sketches, etc.
1597. Gerarde.	1797. T. A. Knight, F.R.S.
1608. Sir G. Plattes.	1803. J. C. Loudon.
1613. Markham (Gervase).	1804. Hort. Soc. Established.
1625. Bacon.	1812. T. Hogg. Florists' Flowers.
1629. Parkinson.	1818. Sweet Ger. Cist. Fl. Gard.
1653. { Ralph Austen, } Fruit trees { John Beale (S. } (Oxford). { Hartlib), }	1820. John Lindley, F.R.S.
1658. John Evelyn.	1821. Dean Herbert.
1665. Royal Soc. Phil. Trans.	1825. Bn. Maund. Bot. Garden.
1683. John Read. Scotch Gardener.	1828. Felton, Portraits, Authors, E. G.
1699. Loudon and Wise. First Great Nursery.	1831. Sir Joseph Paxton.
	1850. Thos. Moore, Chelsea.
	1859. Charles Darwin.

If you study a chronological list of the printed books on gardening, you will find more chaff than golden grain—a large quantity of literary sack as compared with a small quantity of really nourishing bread. But after printing became general you get a good gardening book on an average every ten years. There is a sort of backbone of good books, and to this main column is

attached many adventitious works of far less originality and merit, often mere echoes of better things. Again, a very slight study of early garden books themselves shows that the earlier printers and publishers were adepts at printing new and more attractive title pages for what are now called "remainders," or unsold stock, and also proves that they could lend or borrow blocks, and even pirate their woodcuts from older continental books in quite an up-to-date manner.

I have said that a good gardening book appears about every ten years, but the really great gardening books are much more rare. Thus after Gerarde's "Herbal" (1597), and Parkinson's "Paradisus" (1629), there was no really great work until Miller's "Dictionary" appeared a century or more later (1731), and it is another century before Loudon's encyclopædias of gardening and plants (1827, &c.) and Lindley's "Vegetable Kingdom," &c. appeared. Modern horticultural literature really dates from the beginning of our present century, the great authors being Loudon, Lindley, T. A. Knight, and Dean Herbert; and upon all of them the influence of the newly-established Royal Horticultural Society of 1804 was both great and beneficial.

PERIODICALS.

I need scarcely say that gardening owes a great deal to its periodical and pictorial literature. First comes the "Botanical Magazine," started by W. Curtis in 1787, and still published. Next we have "The Botanical Register," 1815 to 1847 (33 vols.). Loddiges' "Botanical Cabinet" was begun in 1818, and ended in 1824 (20 vols.). Harrison's "Floral Cabinet" (in two series) began 1833, and ended in 1846 (17 vols.). Paxton's "Magazine of Botany," began in 1834, and ended 1849 (16 vols.). At Birmingham Messrs. Knowles and Westcott started the "Birmingham Botanical Garden and Midland Floral Magazine" in 1836 to 1837 (1 vol.), and this was succeeded by the "Floral Cabinet," begun in 1837 and ended in 1840 (3 vols.). Other periodicals issued with coloured plates were "The Florist and Pomologist" and "The Floral Magazine."

Amongst modern periodicals there are some of pre-eminent value. Veitch's "Manual of Orchidaceous Plants," part X. of which, at page 154, contains a good and full bibliography; William's "Orchid Album," and last, but finer than all in its superb plates,

is Sander's "Reichenbachia," containing the most faithful pictures of Orchids ever printed in England or elsewhere.

Amongst weekly newspapers devoted to the craft, of which there are now eight or ten, we must mention "The Gardeners' Chronicle," started in 1841, and still our best representative garden newspaper. "The Cottage Gardener," now the "Journal of Horticulture," "The Gardeners' Magazine," and "The Garden" (1871). These weekly periodicals really represent and contain the history of our gardening to-day.

LANDSCAPE GARDENING.—Landscape gardening literature especially deserves mention, since it is a decorative art, which if not actually born in England, has been developed here to its fullest and greatest extent. "In Garden and Forest," March 12, 1890, there is a bibliographical list of about two hundred and sixty works on this subject, ranging from Bacon's essay of 1625 to 1890. In glancing over* this list, it strikes one as very peculiar that such names as those of Kent 1755, Bridgman 1730, "Capability" Brown 1760, Sir Joseph Paxton 1831, and Robert Marnock 1850 are absent. In a word, these men, who did so much to make English gardens beautiful, made but slight if any contributions with their pens on this subject to our garden literature. Bridgman concealed boundary lines, and is said to have in that way first employed the sunk fence or "ha ha"; while both he and Kent sounded the death knell of "Noah's Arks in Holly; or George and the Dragon in Yew or Box." And of Kent it was especially said that "he leaped the fence and saw that all nature was a garden." Addison (1712), Horace Walpole (1762 to 1771), Whately (1770), W. Gilpin (1782), Steele (1793), Sir Uvedale Price (1798), H. Repton (1795), Sir W. Scott (1828), J. C. Loudon (1807 to 1840) are the principal authors on landscape gardening in England of the past. To-day the names of Mr. W. Robinson and Mr. Goldring, in England; M. Edouard André, in France; and Mr. Frederick Law Olmstead and Mr. Samuel Parsons, jun., in America, suggest themselves as our greatest literary authorities. The importance attached to the English or natural style of landscape gardening in France is attested by the English gardens at Chantilly, Fontainebleau, and elsewhere.

* This bibliographical list is compiled by Mr. Henry Sargent Codman, and deserves the attention of those interested in this subject.

REFERENCE BOOKS ON ENGLISH GARDENING
LITERATURE, WITH NOTES ON THEIR AUTHORS.

By F. W. BURBIDGE, Esq., M.A., F.L.S., F.R.H.S.

[Read at Chester, August 4, 1896.]

I DO not wish to inflict a lengthy bibliographical list upon you, but those who wish to get a bird's-eye view of British garden literature from 1516 to 1836 will find a capital list in the Hon. Miss Amherst's "History of Gardening in England" (pp. 323 to 379), a work itself that is full of interest to all lovers of literature and of gardening (Quaritch, 1895). There is another modern work entitled "Gleanings in Old Garden Literature," by W. Carew Hazlitt (Eliott Stock, 1887). There is also a very interesting "History of English Gardening" by George W. Johnson (1829), and another on "Portraits of English Authors on Gardening" by S. Felton (2nd edition, 1830), while older still, but none the less readable and interesting, are Pulteney's sketches (1790). There are also the bibliographer's "Manual of Lowndes," 1857 to 1864; Pritzel's "Thesaurus," 1872; and Jackson's "Guide to the Literature of Botany," 1881; all well-known finger-posts on the highway and cross-roads of our garden literature.

But horticulture has also been greatly aided by the general poetry and literature of our country. Gower, Chaucer, Spencer, and all the Elizabethan poets, including Shakespeare, allude to flowers; and one of the most interesting books I know is the Rev. Mr. Ellacombe's work on the "Plant-Lore and Garden Craft of Shakespeare." Our poet-laureate of to-day (Austin) is, as I need scarcely mention, a well-known author on gardening, and every line that Ruskin has written on trees, or grass, or flowers deserves attention. All the great story-tellers have in one way or another used the garden as a stage. And, indeed, many of us who love books are beginning to feel that a good garden is after all only another name for "a beautiful book, writ for us by the finger of God. Every flower and leaf is a letter. You have only to learn them . . . and join them, and then go on reading and reading, and you will find yourself carried away from much that is sordid and mean by the beautiful story you are going through.

A SHORT LIST OF AUTHORS AND THEIR WORKS THAT HAVE MOST INFLUENCED HORTICULTURAL PURSUITS IN ENGLAND.

Alexander Neckham, Abbot of Cirencester (1213) (1157–1217) and Bishop Grosseteste or Grossheade of Lincoln (1175–1253) were two of the earliest English writers on gardens and their contents. Both studied in the University at Paris, and were no doubt also influenced by the work of Palladius, "*De Re Rustica*."

Grossheade (sometime Bishop of Lincoln), 1500. "A Boke of Husbandry." A quarto of twelve leaves only printed at London by Wynken de Worde.

As to our native fruits and vegetables England was no doubt well supplied in British and Saxon times, Apples, Pears, Cherries (two species, sweet and bitter), Raspberries, Strawberries, and Gooseberries, being all wild in Britain.

Amongst vegetables also wild there is Cabbage, Carrot, and Seakale, Alexanders (supplanted by Celery), Asparagus, Sea Peas, and Beets, all of which would be available in quantity, while Leeks, Onions, and Garlic, if not really native, were always carried by the earliest of travellers and voyagers, as they are all the world over at the present time (see Earle's "Early English Plant Names," 1880).

1516–1561. "The Great Herbal" folio. From the French. Several editions. Haylit and Miss Amherst both name five and seven respectively, viz. 1516, 1526, 1529, 1539, and 1561. (This work was no doubt in part founded on the "*Ortis Sanitatis*," of which there are many editions.)

1525–1526. "The Little Herbal," quarto. From the Latin.

1523–48. "Fitzherbert's Husbandry," small quarto, several editions. Pynson and Berthelet were the printers.

1525. "Walter Cary's (W. C.) Herbal," small quarto, "a boke of the properties of Herbes"; several editions printed by R. Banckes 1525. Robert Redman? 1530, small 8vo. W. Copland for J. Wright? 1552, small 8vo., and there are others by Skot and Kitson undated.

1527. "Master Jerome Brunswick," folio, "newly translate out of Duyche into Englysshe," by the printer Laurence Andrew, London. This is scarcely a herbal proper, but is entitled "The

vertuose boke of Distyllacyon of the Waters of all maner of Herbes," an old "still room" guide in fact.

1530-40. "Macer's Herbal," octavo, London (Wyer), "practysidly doctor Linacre," two editions (Linacre died in 1524, and is said to have first introduced the Damask Rose from Italy to English gardens).

1550. A Little Herbal "of the Properties of Herbes," by Antony Ascham, 8vo.

1538-68. Turner, William, "Libellus de Re Herbaria Novus," 4to, 8 leaves. J. Byddellum, London, 1538: a reprint in facsimile and a life of Turner was edited by Mr. B. O. Jackson in 1877, privately printed.

1568. The first complete Herbal in English was the work of William Turner, a clergyman born in 1538. His work was completed and printed at Collen in 1568, and is dedicated to the Queen. It is in black letter and has many wood-cuts, accurately drawn and well placed. Turner had studied botany at Bologna and elsewhere on the Continent, to which he had been driven in part by the religious dissensions of the time. His object, as he tells us in an earlier work called "The Names of Herbes" (1548), was to set out "an herbal in Englishe, as Fuchsius did in Latin, with the descriptions, figures, and properties of as many herbes as I had sene and knew."

1570. William Bulleyn, a physician and divine, wrote on gardening about this date, and he deserves mention as having always strenuously upheld the soil and climate of his native land. He was born at Ely, then a great centre of gardening and of fruit culture, and he travelled both at home and on the Continent, studying natural history with zeal and success, at a time when it was not always a popular pursuit.

1563. Hill, Thomas, "A most briefe and pleasaunt treatyse, teachynge howe to dress, sowe, and set a garden." Small 8vo.: London, T. Marshe. Other enlarged editions appeared in 1568, 1574, and in later years, under the title "The Profitable Arte of Gardening," and his latest work, "The Gardener's Labyrinth, containing a discourse of the Gardener's Life," was finished by Henry Dethick, and printed by Henry Bynneman: London, 1577. Small quarto.

Hill was a literary man rather than a practical gardener, yet to him belongs the credit of having produced the first practical

gardening book, as distinguished from the herbals. His last work, "The Gardener's Labrinth," was said to be by "Didymus Mountain," a pun on his own name common at the time. His designs and descriptions for herb borders of intricate figures were so popular as to be adopted in the Chelsea Botanical Garden in later years, and Hill's notions about "divers herbers, knots, and mazes," cunningly handled for the beautifying of gardens, survived even Bacon's sarcasm, and exist to-day in too many of our public gardens in the shape of bedding-out and carpet-bedding designs.

1557. The next popular author appears to have been Thomas Tusser, who wrote "A Hundredth Pointes of Good Housbandrie" in 1557, but he is much better known by his amplification of this work called the "Five Hundredth Pointes of Good Husbandry, united to as many of Good Huswiferie," published in 1573.

Tusser, like Arthur Young, failed as a farmer, though he gave very good advice about it in his books. His jingling rhymes no doubt lent themselves to ready memory, and were in their way a revival of "Jon the Gardener's" poem, already alluded to in this paper as existent in the library at Trinity College, Cambridge. It would be very interesting if it could be shown that Tusser, who was for some time at Trinity Hall, Cambridge, in 1574, imbibed his idea of poetical agriculture from the old MS. on poetical gardening. At any rate, I ask the question: Is it possible that Tusser, before he lived at Cambridge in 1574, could have seen or heard of the old MS. alluded to?

We now come to the golden days of Elizabeth and her Lord-Treasurer Cecil, the epoch in which Shakespeare himself appears. In 1596 Gerarde published the first English catalogue of garden plants, and in 1597 his "Great Herbal" was issued fresh from the printer's hands. The manner in which this work was produced is this: John Norton, the Queen's printer, had commissioned a Dr. Priest to translate the "Pemptades" of Rembert Dodoens from Latin into English, but he died; and in some way Gerarde appears to have obtained the translation and actually used it as the backbone of his book. To mask the fact, however, he rearranged the manuscript, using the system of Lobel instead of that of Dodoens. Then, to further buckram out the work, Norton obtained wood blocks from the continent, some say from Frankfurt, but more probably from the then celebrated

press of Christopher Plantin, or Plantain-Moretus, at Antwerp, an establishment still existent as a museum and of wonderful interest as a sixteenth-century palace and workshop combined. These wood blocks were used sometimes correctly, but often wrongly, and so the borrowed work of Dodoens was Lobelised, and illustrated by 1,800 or so of borrowed engravings, and thus Gerarde's "*magnum opus*" first saw the light in 1597. Johnson's edition of 1633 is a far better book.

Gerarde was born at Nantwich, Cheshire, in 1545, and settled in London prior to 1577, as he speaks in the "*Herball*" (preface) of having superintended the gardens of Lord Burleigh in the Strand, and also at Theobald's in Hertfordshire, for twenty years. The climate of this date, 1596, was unpropitious, a series of wet, cold summers having spoiled the crops, and wheat was five guineas the quarter, and this at a date when money went five or six times as far as it does now. Lord Burleigh spent ten pounds per week in giving the poor employment in his gardens under Gerarde's management, and he prides himself on giving wages and liveries to all the servants or gardeners employed. At an early age he travelled northwards, probably to the Baltic, as a ship's surgeon, since he speaks of Denmark, Sweden and Norway, Poland and Russia (Livonia) as places in which he had been. In 1595 he was elected a member of the Court of Assistants of the Barber Surgeons Company, of which he eventually became Master, and he had a house and a garden in Holborn. The Barber Surgeons held a charter from King Henry VIII., an event recorded by Holbein in his great picture now in the Guildhall Gallery.

Gerarde's great work, patched up and defective though it was, undoubtedly exerted a great influence on the garden practice of its time, and it will always be interesting as one of the books possibly seen by Shakespeare and other authors of the Elizabethan era. One can easily imagine the effect it would have in country houses everywhere. Never before had such a richly illustrated and instructive book on vegetable life been seen. It was a great book that appeared at a great and propitious time, a living fountain in a sunny place, and even to-day it is a work that must have its niche in all good garden libraries.

1633. Thomas Johnson, M.D. Oxon, is credited by Wood as being the best herbalist of his time, and he initiated those

herborising excursions that afterwards formed a feature of the Apothecary's Society, and led eventually to the compilation of local and county floras. His list of the plants found growing on Hampstead Heath in 1632 is, perhaps, the first local flora ever printed in England.

His great work was his much improved and corrected edition of Gerarde's "Herbal" of 1633, to which he added 800 plants and 700 figures, and above all he very clearly points out where he altered or augmented the original Gerarde of 1597.

He was also a soldier in the Civil War, and acting as lieutenant-colonel he received a shot in the shoulder at Basing House, and died a fortnight afterwards.

Not infrequently wills and bequests and other memoranda are found inside the cover or on the fly-leaves of this fine old "Herbal." In my own copy of the first edition is the book-plate of Edw. Eyton of Eyton, Esq., and beneath it is written in a clear, bold hand: "I bought this book at auction in the Isle of Wight, bidding against Doctor Joseph Warton, headmaster of Winchester School: price, 19s. 6d., unbound; binding cost me 10s. 6d.; total, £1. 10s. Anno domini, 1782. Edw. Eyton, aged 24. N.B.—I give this and all my other books to my son, Henric Edw. Eyton, who was born in the Isle of Wight February 7, 1784. Ed. Eyton." I have also a copy of Johnson's edition of 1633, on the stout leather binding of which both back and front is stamped, "The gift of P. M. to M. M. and S. B., ano. 1706"; and another copy of the same edition, which I gave to a friend, had a deed of gift drawn up on one of its fly-leaves.

1604. "The Fruiterers' Secrets," by R. B., solde by Roger Jackson, London; small quarto: was a work dealing with fruits and fruit trees, and was again issued in 1808-9 as "The Husbandman's Fruitfull Orchard."

1613. Gervase Markham was a most prolific hack-writer of this epoch. He was born at Gotham, in Nottinghamshire, about the middle of the sixteenth century, being a younger and portionless son of Robert Markham, Esq. When in the prime of life he acted as champion and gallant of the Countess of Shrewsbury 1591, and in her cause he was dangerously wounded in a duel with Sir John Halles. His numerous works show that there must have been a strong desire at the time for books dealing with gardening and other rural affairs.

Gervase Markham, "The English Husbandman," together with the art of planting, grafting, and gardening, by G. M., London. T. S. for John Browne, 1613, quarto.

The second booke of "The English Husbandman," containing the ordering of the kitchen-garden. London, T. S., 1614, quarto. Again reprinted and enlarged by the author in three parts, 4to., in 1635.

Maison Rustique, 1616. See 1600. Estienne and Liebault, Surflet.

The "Country Housewife's Garden," with the husbandry of bees, with divers new knots for gardens, by G. M., 1617, quarto. Again re-issued in 1618 with Lawson's "New Orchard," and alone in 1620, and again in 1623.

Markham's "Farewell to Husbandry, or the Inriching of all sorts of Barren and Sterile Grounds." . . . J. B. for Roger Jackson, 1620, quarto.

The "Inrichment of the Weald of Kent." . . . G. P. for R. Jackson, 1625, quarto.

"The Whole Art of Husbandrie," by C. Heresbach, translated by B. Googe, enlarged by Gervase Markham 1631, quarto.

1613-38. "A Way to Get Wealthe, or Cheap and Good Husbandry," quarto, 1638-48. A collection of Markham's quartos bound together. My own copy contains in all nine of these quartos that had previously been issued separately—viz., "A Way to Get Wealth," "Country Contentments," "The English Housewife," "The Inrichment of the Weald of Kent," "Farewell to Husbandry," Lawson's "New Orchard and Garden," "The Country Housewife's Garden," Harward's "Art of Propagating Plants," and "The Husbandman's Fruitfull Orchard." These collected works are very interesting, dealing as they do with most of the aspects of country life of the time, such as soils, horse and cattle and poultry, breeding, hunting, angling, cocking, hawking, fish and fish-ponds, diseases and medicines for men and animals, cookery and distillation of herbs, &c., brewing ales and wines, gardening, orchards and bees, &c.

"The Countryman's Recreation, or the Art of Planting, Grafting, and Gardening," London, 1840, quarto. Again reprinted and reissued in 1653 and in 1654.

1629. After Gerarde comes John Parkinson, who published his delightful folio "Paradisus Terrestris," or a Garden of

Pleasant Flowers, in 1629. Parkinson was herbalist to the ill-fated King Charles I., and his book is dedicated to the Queen Henrietta Maria at this date, as indeed long before it; gardening was considered as belonging to the housewife's department or charge; hence we find that not only Gerarde and Parkinson, but many earlier authors, make very conciliatory remarks about ladies in their works.

There is a sparkling freshness and originality about Parkinson's work, and it must always find a corner in the garden library. The late Mrs. Ewing pays a charming tribute to its worth in a book for children called "*Mary's Meadow*," which is itself full of garden lore.

Parkinson was an herbalist and apothecary, who received Royal Patronage from James I., and Charles I. made him "*Botanicus Regius Primarius*." The Tradescants were active collectors and gardeners of this epoch. John Tradescant (father) was gardener to the first Lord Salisbury, and there is a manuscript at Hatfield enumerating purchases made in Holland and Paris for his employer's garden. The date is 1611.

The Tradescants (grandsire, father, and son) had a house and museum of curiosities, and a garden at Lambeth, of which the remains were extant in 1749 (*Phil. Trans.*, vol. 46, p. 160). When the son died in 1662 he left the museum, &c., to Mr. Elias Ashmole, who bequeathed it to the University at Oxford, where it in part now exists as the Ashmolean Museum. The Tradescants were Dutch, the grandsire coming over in James I.'s time, and though they did not contribute any works to our garden literature directly, they undoubtedly exerted a great influence on the gardening art of their time.

1653. Ralph Austen published "*A Treatise on Fruit Trees*" at Oxford that went through several editions; and in the same year Dr. John Beale also produced at Oxford "*A Treatise on Fruit Trees for Cider and Perry*," and four years later (1657) he published, in London, "*The Hereford Orchards as a Pattern for the whole of England*."

1658. We come to John Evelyn, who translated "*The French Gardiner*," followed in 1664 by the immortal "*Sylva*," to which is annexed "*Pomona*," concerning Fruit Trees; and his "*Kalendarium Hortense*"; and in 1666 the "*Kalendarium Hortense*," or "*The Gardener's Almanac*," was published

separately, directing what he is to do monthly throughout the year. It is impossible to overrate the inspiring influence Evelyn exercised on the gardening and wood craft of his time. His diary contains a good many references to the horticulture of the period.

1660. Fuller, who wrote on Gardening in Surrey in 1660, says: "Gardening was first brought into England for profit about seventy years ago, before which we fetched most of our cherries from Holland, apples from France, and had hardly a mess of rath ripe peas but from Holland, which were dainties for ladies—they came so far and cost so dear." He adds: "Since gardening hath crept out of Holland (Flanders) to Sandwich, Kent, and thence to Surrey, where, though they have given £6 an acre and upwards, they have made their rent, lived comfortably, and set many people on work."

1665. The Royal Society was established, and in the earlier volumes of the "Philosophical Transactions" (*i.e.* up to 1700) there are valuable papers on horticultural affairs by Evelyn, Cuninghame, Merret, Petiver, Sir Hans Sloane, and many others.

1667. Abraham Cowley's poem on "The Garden" was printed at the end of some other poems by Jeremiah Wells, and it may be taken as an index of the interest attached to gardens at the time.

1669. John Worlidge published his "Systema Horticultura," or Art of Gardening.

1670. Leonard Meager published several works, entitled "The English Gardener," 1670; "The New Art of Gardening," with "The Gardener's Almanack," 1697.

1682. Samuel Gilbert sent out "The Florists' Vade Mecum," which went through two other editions, and illustrate the then growing taste for florists' flowers. Gilbert also wrote a "Gardener's Almanack," in which he gives a full and accurate description of the Garden Roses of the time, *i.e.* just before the reign of Queen Anne.

1699. We come to the reign of Queen Anne—the epoch of straight lines, clipped trees, and elegant silver ware—and the great nurserymen of the day were London and Wise, both pupils of Mr. Rose, who was one of the most celebrated gardeners of his time. Rose was gardener to the Earl of Essex, by whom he had

been sent to study gardening at Versailles, and on his return he was appointed Royal gardener by Charles I. French influence was now very great, and the works of Quintinye and Le Notre were translated by Evelyn and London and Wise, so that they doubtless were standard books of the time in England. George London had been sent to France for study by Rose, and on his return he was gardener to the great Compton, Bishop of London. A few years afterwards he and others took the Brompton Park Nursery, and in 1694, two of his partners having died and the other retired, London was left in sole possession, and he took Mr. Henry Wise into the business. This nursery was over 100 acres, and was well stocked, and Evelyn described it as "the greatest collection ever seen or heard of in books or travels." Bowack (1705) and Switzer both agree that the stock at a penny a plant would have produced £40,000. London was an active business man. He and his partner Wise had a large trade all over England. In 1696 he went with the Earl of Portland to France, on an embassy to King William, and visited Versailles, his observations thereon being given in his translation of M. Quintinye's work. On the death of King William Mr. Wise was appointed Royal gardener to Queen Anne, and Mr. London rode all over England, visiting all the most remarkable gardens on his journeys. Mr. Wise survived Mr. London, and, like him, was a landscape gardener, he having designed the grounds at Blenheim, amongst others. They translated M. de Quintinye's work, and also that of M. Louis Liger, under the title of "The Retired Gardener" (1706), which was no doubt the best complete work on gardening then extant.

1705. Richard Bradley, F.R.S., who resided at Camden House, Kensington, was a prolific author, who very materially aided the progress of scientific horticulture. His hobby appears to have been the growth of succulent plants, but his "New Improvements of Planting and Gardening" (1717) went through several editions, and was for the date a most valuable and suggestive work. Bradley studied "the motion of the sap," and also was one of the first to write on "the generation of plants in English," and it is not too much to say that Bradley did much to carry on the horticultural enthusiasm that John Evelyn had originated twenty years before.

1707. Thomas Fairchild has been described as one of the few

nursery gardeners of his time who united a love of science with the practice of his art. He was a personal friend of Bradley, in whose works many of his experiments on sexuality in plants—then a new study—are first published. A large nurseryman and florist, he cultivated one of the last vineyards at Hoxton in 1722.

A flower sermon, for which he left funds, is delivered in St. Leonard's Church, Shoreditch, on Whit Tuesday every year.

Fairchild is believed to have been the raiser of the first known hybrid plant ever raised in English gardens, viz., "Fairchild's Mule Pink," which was presumably a cross between some form of Pink or Carnation and the Sweet William or *Dianthus barbatus*.

1714. John Lawrence studied at Clare Hall, Cambridge, and was Rector of Yelvertoft, in Northamptonshire, in 1703.

His book, "The Clergyman's Recreation" (1714), went through several editions and was a practical and valuable book. He wrote of his own experience, and his works had much influence at the time they appeared, and Lawrence may stand as an example of the good teaching that has emanated since his time from many a rectory or vicarage garden.

1718. Steven Switzer was a native of Hampshire, born about 1665, and he died, aged about 80, in 1745. He was employed by the great firm of London and Wise, and in 1706 he assisted them in laying out the grounds at Blenheim. He was also kitchen gardener at St. James's Palace under Mr. Lowder, afterwards gardener to the Earl of Orrery in 1724. He was also a gardener and nurseryman on his own account, and evidently had many ups and downs in his life, at one time enjoying the society of "the best men and the best books," and again reduced to what he calls "the meanest labours of the scythe, spade, and wheelbarrow."

His great work is the "Iconographia Rustica," in three vols., published in 1718, though the first volume had appeared three years previously (1715) under the title of "The Nobleman, Gentleman, and Gardener's Recreation." He wrote also "The Practical Kitchen Gardener" (1727) and "The Practical Fruit Gardener" (1724-31), and several other works; but Switzer and his works, good though they are, seem to have been overshadowed by those of his old employers, London and Wise, and by

the magnum opus of his great contemporary, Phillip Miller, of the Chelsea Physic Garden.

1724. Phillip Miller, F.R.S. Miller was born in 1691, and is said by Prof. Martyn to have succeeded his father as gardener to the Apothecaries' Company at Chelsea in the year 1722, on the nomination of Sir Hans Sloane. Miller studied the botanical systems of Ray and Tournefort, and he visited Holland to study the garden practice of that land of flowers. Miller wrote a "Gardener's Kalendar" in 1724.

The first edition of his "Gardener's Dictionary" was published under the auspices of a society of gardeners, of which Miller was secretary, in 1724, but it appeared in folio in 1731, and had passed through seven editions by the year 1759. In the seventh edition the Linnean system was adopted, and it is esteemed the most complete, though an eighth was published in 1759 during the author's lifetime. In 1807, Dr. Martyn, Professor of Botany at Cambridge, published an edition in four folio volumes, which is a useful book of reference even to-day. Linnæus visited the Chelsea Garden and saw Miller in 1736.

There is no doubt that the influence of Miller, added to that of the Chelsea Garden and his great "Dictionary of Gardening," exerted a most powerful stimulus on the garden craft of the eighteenth century.

1754. James Justice, F.R.S., one of the principal clerks of session in Scotland, was a gentleman who resided at Crichton, near Dalkeith, and he was passionately fond of gardening. He twice went to Holland and once to Italy to study horticultural subjects, and his collection of Auriculas or "Bears Ears," as they were then called, was very famous. He is said to have been the first to introduce Pineapples to Scotch gardens.

He wrote "The Scots' Gardener's Director" in 1754, which again appeared in 1764 as "The British Gardener's Director," and there are several other editions. It is a truly original and valuable practical work, and was one of the prized possessions of the poet Robert Burns. One of the earliest of all Scottish authors on gardening was John Reid, who wrote "The Scotch Gardener" in 1683, 4to. Another edition was published in Edinburgh as late as 1766, to which is appended a "Treatise on Forest Trees," by the Earl of Haddington.

Reid, Justice, Abercrombie, and Nicol worthily uphold the Scottish garden literature of their day.

1763. Thomas Martyn, F.R.S., Professor of Botany at Cambridge, translated the "Georgics" of Virgil, with notes, and edited the ninth and best edition of Miller's great "Gardener's Dictionary."

1767. John Abercrombie, born in Edinburgh in 1726, where his father had an extensive market garden, and he saw the battle of Preston Pans from his father's garden walls. He early came to London, and was gardener to several gentlemen, but eventually set up as a market gardener between Mile End and Hackney, afterwards removing to Newington and Tottenham Court, where he had a seedsman's and florist's business. In 1778 he wrote his "Every Man his own Gardener," and paid Thomas Mawe, the Duke of Leeds' gardener, twenty pounds to allow his name on the title page. He afterwards became more confident of his powers, and published his "Gardener's Pocket Journal or Daily Assistant," 1791, which ran through many editions, and for many years 2,000 copies were annually sold. He wrote many other works, and was a very practical believer in tea and tobacco, of both of which he consumed enormous quantities. There is a tradition that when he went to see Thomas Mawe he found him so bepowdered and dressed that he mistook him for his master, the Duke of Leeds. Abercrombie is said to have been induced to write by Mr. Davis, a London bookseller, and the celebrated Dr. Oliver Goldsmith, the latter promising to revise and correct his original MSS., which of course he did not perform.

1777. Conrad Loddiges. The Loddiges had a celebrated nursery of exotics at Hackney during the latter end of the eighteenth and beginning of the present century, and were the first trade cultivators of Orchids. Their serial work with plain and coloured plates, "The Botanical Cabinet," extended to twenty volumes. It was established in 1818.

1789. William Curtis, to whom we are indebted for the "Flora Londinensis" and the still existent and flourishing "Botanical Magazine," was born at Alton, in Hampshire, in 1746. Curtis's father was a tanner, and the son was apprenticed to his grandfather, who was an apothecary in the same place. Living near to the old Crown Inn at Alton young Curtis became

acquainted with John Lagg, the ostler of that establishment, who was a sober and steady man, with a considerable knowledge of plants, which he had acquired from reading the works of Gerarde and John Parkinson! So impressed was young Curtis by this poor man and his books that he took up the study of natural history and botany especially, so that to the influence of Lagg the ostler we may really be said to owe the origin of the longest lived and best of all our botanical periodicals.

Curtis had gardens in Lambeth Marsh and in Brompton, in which to grow plants for his lectures and demonstrations in the Chelsea garden. He died in 1779 in his 53rd year, and is buried at Battersea. It is scarcely too much to call Curtis and James Sowerby the fathers of pictorial botany and gardening. Edwards and Andrews also deserve mention for their plates.

1790. Richard Pulteney. Dr. Pulteney wrote "Historical and Biographical Sketches on the Progress of Botany," and rarely designed to mention garden writers unless, as he says, eminent for their acquaintance with English Botany, and amongst those who fulfil his requirements he instances Fairchild, Knowlton, Gordon, and Miller.

1791. Richard Anthony Salisbury was the first secretary of the Horticultural Society, and wrote several works and some valuable papers.

1797. Thomas Andrew Knight, F.R.S., Knight was born amongst the apple-orchards of Herefordshire in 1759, and was one of the best horticulturists of his time. In 1804 he was mainly instrumental in establishing the Horticultural Society, of which he was afterwards President, and by his enlightened experiments and writings he exerted much influence on the practice and literature of horticulture. To Knight and the late Robert Thompson, author of the well-known "Gardener's Assistant," it was due in a great measure that the Horticultural Society took such a great, and for the whole country such a beneficial, action in the culture of the best fruit trees.

1803. John Claudius London began to practise as a landscape gardener at this date, having been born in Lanarkshire in 1782. Like Tusser and Arthur Young he failed in farming, and is best known for his works on gardening and trees and shrubs. His encyclopædias of gardening published in 1827 and his Arboretum and Fruticetum Britannicum are useful works of

reference even to-day. A very readable account of his life and struggles through failing health and ill-fortune is given in his posthumous work, entitled "Self Instruction for Young Gardeners."

Apart from his copious and valuable works on gardening and domestic architecture Loudon did much to encourage others. In Mr. John Ruskin's "Instructions in the Use of Rudimentary Series," he says, "Mr. Loudon was the first literary patron who sent works of mine to be actually set in print, in his 'Magazine of Natural History,' when I was sixteen." There can be no doubt but that Loudon's works mark a distinct epoch in our garden literature, just as the establishment of the Horticultural Society at this period also emphasised a renaissance.

1804-96. The Horticultural Society.—The establishment of the Horticultural Society in 1804 under the auspices of Sir Joseph Banks, T. A. Knight, and other eminent scientific and practical horticulturists gave an impetus to gardening and to gardening literature that is even yet not exhausted. The experiments conducted in the Chiswick gardens and the publication of the sumptuous "Transactions" (10 vols.) and the useful "Journals" (of which there are two or three series) naturally spread the light and colour of progress throughout the country, and also fostered to a great extent the energies and abilities of Sweet, Lindley, Dean Herbert, Haworth, Salisbury Sabine, J. C. Loudon, and other authors during the early years of its existence. In 1812 the "Transactions" began, in 1821 the Chiswick garden of 33 acres was founded under the auspicious aid of the then Duke of Devonshire. In the same year the Society sent out their first plant collector, Mr. John Potts, to Bengal and China; and about the same time Mr. Reeves, a merchant at Macao, gave his valuable aid, and through him the Society introduced the first plant of *Wistaria sinensis* in 1818, which still exists in the Chiswick garden.

In 1823 Mr. J. D. Parks also was sent to China, Mr. John Forbes to East Africa, and Mr. D. Douglas to the United States; and in 1824 his travels were extended to Colombia, and Mr. J. McRae went to the Sandwich Isles. In 1842 Mr. Robert Fortune went to China and introduced many now popular plants to the Society's garden for the first time. And at a later date Mr. Pearce and Mr. Weir collected for the Society in South America.

At the same time no pains were spared at home, and the best varieties of hardy fruit trees, figs, and vines were obtained from the Continent and elsewhere. Even so late as 1868 the Chiswick garden contained by far the finest and most complete collection of hardy fruits in existence.

Those who wish to see the vicissitudes through which the Society has passed from its establishment in 1804 to the year 1863 should refer to "The Book of the Royal Horticultural Society," by Mr. Andrew Murray, while its subsequent history exists in the pages of the Society's "Journal," the "Gardeners' Chronicle," and other gardening papers.

1818. Robert Sweet, a gardener who lived at Chelsea, and wrote extensively of garden plants and greenhouse flowers. His monographs of the "Geraniaceæ" and the "Cistineæ" are well known, as also his "British Flower Garden" in two series—viz., (i.) 1823–29; (ii.) 1831–38. Both Sweet's "Flower Garden" and Lindley's and Edward's "Botanical Register" appear to have been modelled on the lines of the older "Botanical Magazine" of Curtis.

1820. John Lindley, F.R.S., the son of a nurseryman at Norwich, who, early attracted to the study of botany and horticulture, exerted much influence in his time. He acted for some years as the Secretary of the Horticultural Society, and was a voluminous writer. His "School Botany," "Theory and Practice of Horticulture," and "The Vegetable Kingdom" are well and deservedly known as treating of garden botany in a lucid, scientific spirit. He is said to have "raised horticulture from an empirical art to a developed science" (Haydn).

Dr. Lindley and Mr. John Bateman, F.R.S., were two of our earliest and best writers on orchidaceous plants, and did much to encourage their cultivation. Lindley, with Sir Joseph Paxton, was also the first editor of the "Gardeners' Chronicle" in 1841. The Lindley Library at the R.H.S. Rooms, 117 Victoria Street, S.W., is a fitting memorial of him.

1826. B. Maund, an intelligent bookseller living at Bromsgrove, produced "The Botanic Garden" (26 vols.) and "The Botanist" (5 vols), with beautiful coloured plates and interesting letterpress. "The Botanic Garden" is a charming work, having four figures on a quarto page, exquisitely drawn and coloured.

1828–30. S. Felton, author of a very interesting work "On

the Portraits of English Authors on Gardening," with biographical notices. This work is now and then met with bound up with "A History of English Gardening," by George W. Johnson, and published about the same date, although by different publishers.

1821. Hon. and Rev. W. Herbert, author of the "Amaryllidaceæ" and a remarkable paper on "Hybridisation among Vegetables." Herbert was "a Darwinian before Darwin," and his observations are often strikingly original. He was a worthy successor to Bradley and Fairchild, who had treated on hybridity a century or so before his time.

1831. Sir J. Paxton. Paxton was a young gardener at Chiswick, where he deservedly obtained the notice of the Duke of Devonshire, who made him superintendent of the then celebrated gardens at Chatsworth. He was afterwards knighted for his share in the great exhibition of 1851, which in part is now existent as the Crystal Palace.

The first edition of his "Gardeners' Dictionary" was published in 1840, and his "Magazine of Botany" was a well-known illustrated periodical of its time.

1850-85. Thomas Moore, F.L.S., succeeded R. Fortune as curator of the Apothecaries' garden at Chelsea. He was an authority on ferns, and acted with Dr. R. Hogg and the late Rev. M. J. Berkeley on the Chiswick or Garden Committee of the Royal Horticultural Society. He also acted with Dr. M. T. Masters for some years as co-editor of the "Gardeners' Chronicle," and as an authority on garden vegetation had a high reputation. He edited "The Florist and Pomologist" for many years, and also the second edition of Thompson's "Gardeners' Assistant" (1877) for Messrs. Blackie and Co. Moore also edited the "Treasury of Botany," a valuable work of reference of its kind.

1859. Charles Darwin, F.R.S. Although a biologist rather than a horticulturist, it would be difficult to name a worker who has done more to ennoble and enlighten the labours of the gardener and farmer than Darwin. His views on plant life and evolution cleared away much that was previously misty and obscure. The "mules" and "bastard" progeny once despised by some botanists as the cause of confusion were shown by Darwin to be really links in the great chain of that continual upward and onward progress so far as plant and animal life is concerned.

His greatest work, "Origin of Species," and his "Animals and Plants under Domestication" deserve a place in every garden library.

We may safely say that botany and horticulture after Darwin have both risen to new heights, and both are now freighted with far richer potentialities than it was possible for them to possess before Darwin's studies were published. Of his great life's work it has been truly said that "he turned all the old and ever-winding streams of thought into one straight and broad and clean-cut channel."

GARDEN LIBRARIES.

By F. W. BURBIDGE, Esq., M.A., F.L.S., F.R.H.S.

[Read at Chester, August 4, 1896.]

THE question of garden libraries is complicated by a good many considerations, but the central fact remains that, wherever there is a garden, a library of some kind relating to plants and their health and cultivation is essential. In all cases the books must be selected according to the trend or genius of the place. In one garden it will be fruit and vegetables; in another Orchids, Palms, or Ferns; in another Alpine and hardy herbaceous plants; while in another place trees and shrubs will receive attention, and then the garden library will follow on sympathetic lines. Of course we must use the library as a walking-stick rather than as a crutch, but it must exist in all well-cared-for places.

Even a cottage gardener or a railway porter who cultivates a bit of embankment will garden all the better if he possesses a little garden calendar and a cheap garden dictionary.

In all large gardens I believe it would be found to be a good investment, rather than an expenditure, to provide a common room for the young gardeners employed well stocked with standard works of reference and the weekly gardening journals. This is done at Kew and Cambridge, and in some of our larger private gardens; but the garden library is far from being a universal institution, and its use and influence might be extended to advantage.

In America and in Germany the library seems to be thought as essential to good gardening and profitable land culture as is here with us the seed-room or the tool-shed ; and in England we are beginning to perceive the value of technical education and to recognise the vital importance of the most recent of scientific discoveries relating to our crops and their diseases, or the soil in which they grow. Private garden libraries, while most desirable, really form a part of a much larger and wider question. If libraries are essential for the garden, surely they are even more so on the farm.

In the good old times, when we held a practical monopoly of wheat and wool, the farms brought in plenty of money to tenant and landlord alike, and so prosperous farms kept up our fine old English gardens. Nowadays there seems a tendency, and especially near large towns, to turn farms into more profitable fruit and market gardens, so that the cases are reversed, and the garden is now often expected to pay its way, and to replace, as far as possible, the money losses of the farm. How to make the land pay is the question of the time. This is a question of great importance to our county councils more especially. Nearly everywhere they are sending abroad technical instructors to the villages and country districts, and the good they do might well be largely augmented by their establishing village club-rooms and libraries, for it has been well said that a man is not benefited half so much by what you teach him as he is by what you help him to learn for himself at the time when it is of highest service to him and to his country.

But to form libraries we must have good and useful books, and I shall give a short list of those I believe to be the best of their kind ; and one of the best ways I know of getting the best gardening books into the best hands is to award them as prizes to the cultivators and exhibitors of garden produce at allotment garden and village flower shows.

GOOD AND USEFUL GARDENING BOOKS.

ELEMENTARY.

1. The Primer of Horticulture (Macmillan).
2. Paxton's Cottage Gardeners' Calendar ("Gardeners' Chronicle").
3. Best Fruit Trees for Cottagers (Royal Horticultural Society).
4. An Encyclopædia of Gardening (Sanders).
5. Epitome of Gardening (Moore and Masters).

FIRST PRINCIPLES.

6. Elements of Agriculture (Freaen).
7. The Perplexed Farmer (Villes).
8. The Physiology of Plants (Sorauer and Weiss).
9. Theory and Practice of Horticulture (Lindley).

GENERAL WORKS OF REFERENCE.

10. Cottage Gardener's Dictionary (Bell and Sons).
11. Dictionary of Gardening (Nicholson).
12. Treasury of Botany (Moore and Lindley).
13. English Flower Garden (Robinson).
14. Gardener's Assistant (Thompson).
15. How to Lay Out a Garden (Kemp).

SPECIAL WORKS OF REFERENCE.

16. Manual of Orchidaceous Plants (Veitch).
17. Orchid Grower's Manual (Williams).
18. Stove and Greenhouse Plants (Williams).
19. Select Ferns (Williams).
20. Fruit Culture under Glass (Thomson).
21. Vines and Vine Culture (Barron).
22. Manual of Coniferous Plants (Veitch).
23. Hardy Trees and Shrubs (Hemsley).
24. Garden Receipts (Quinn).
25. The Vegetable Garden (Vilmorin), Robinson's Translation.

NOMENCLATURE.

26. Genera Plantarum (Hooker and Bentham).
27. Index to Genera Plantarum (Durand).
28. Index Kewensis (Hooker and Jackson).
29. Kew Handbooks.

INTERESTING.

30. The Story of the Plants (G. Allen).
31. My Summer in a Garden (C. D. Warner).
32. The Six of Spades (Dean Hole).
33. A Tour round my Garden (A. Karr): Wood's Translation.
34. Days and Hours in a Garden (E. V. B.).
35. The Praise of Gardens (Sieveking).
36. The Garden that I Love (Alfred Austin).
37. In Veronica's Garden (Alfred Austin).
38. Gardens and Woodlands (F. J. Hope).

N.B.—In all cases it is advisable to ask for the latest editions.

THIRD ANNUAL EXHIBITION OF AND CONFERENCE ON BRITISH-GROWN FRUIT.

HELD AT THE CRYSTAL PALACE, OCTOBER, 1, 2, 3, 1896.

RARELY, if ever, have we experienced an autumn so unfavourable for a Great Show of British-grown Fruit. The frosts of spring in many places reduced the Apple and Plum crops

severely, and the abundance of caterpillars and lack of rain during the early summer added to the misfortune, which was completed by the altogether phenomenal winds and rains of the ripening months, August and September. It is calculated that the winds of September alone must have practically destroyed half the crops of all standard and bush trees throughout the United Kingdom. Yet, notwithstanding these untoward circumstances, the Show, if somewhat smaller than in 1895—a most favourable season—was as large as that of 1894, and the quality of the fruit was, in almost every section that was fairly represented, superb. Seldom have finer coloured apples, larger pears, or better finished grapes been seen, and the quantity and quality, together with the variety of the sources from which they came, were certainly sufficient to demonstrate that, even in the most unfortunate and unfavourable years, our British growers can in almost any part of our islands produce fruit which need not fear—nay, which may fearlessly challenge—comparison with that produced in any quarter of the globe.

The Council of the Royal Horticultural Society are most anxious to continue this Show annually, but, as has been explained elsewhere and before, they have no possible means in connection with the Show of recouping the Society for the inevitable expense. Its continuance, therefore, from year to year depends entirely upon those who are interested in the matter subscribing a sum of not less than £100 every year towards the Prize Fund. If this be done, Fruit growers may depend upon an annual Show; if it be not done, the Show must drop out of existence. Subscriptions (or promises of subscriptions) to the 1897 Show should be sent to the Secretary, R.H.S. Office, 117 Victoria Street, S.W. The following is the

LIST OF SUBSCRIBERS TO THE PRIZE FUND, 1896.

	£	s.	d.
Balderson, H., Corner Hall, Hemel Hempstead	1	1	0
Brown, Rev. J. H., Bedstone Rectory, Bucknell, Salop	0	5	0
Browne, Colville, Hextable	0	10	6
Bunyard & Co., George, The Royal Nurseries, Maidstone	25	0	0
Bythway, William, Llanelly	1	1	0
Chester Paxton Society, Grosvenor Museum, Chester	0	10	6
Colman, J., Gatton Park, Reigate	2	2	0
Cotterell, W., Oxon Hoath, Tonbridge	0	5	0
Day, Jas., Galloway House Gardens, Garliestown, N.B.	0	10	6
Digby, J. K. Wingfield, Sherborne Castle, Dorset	1	0	0

	£	s.	d.
Dunn, Malcolm, Dalkeith Palace Gardens, N.B	2	2	0
Edwards, R., Beechey Lees, Sevenoaks	0	5	0
Fennell, Geo., Fairlawn Gardens, Tonbridge	0	5	0
Fish, D. T., Hardwick House, Bury St. Edmunds	0	10	6
Fletcher, F. J., Lowbrook, Maidenhead	1	0	0
Harris, F. Eastnor Gardens, Ledbury	0	7	6
Harrison & Sons, John, Market Place, Leicester	1	1	0
Haywood, T. B., Woodhatch, Reigate	2	2	0
Hudson, Jas., Gunnersbury House Gardens, Acton	1	1	0
Kay, Peter, Claigmar, Finchley	1	1	0
Kemp, A., Coolhurst Gardens, Horsham	0	5	0
Laing & Sons, J., Forest Hill, S.E.	2	2	0
Low & Co., H., Upper Clapton, E.	2	2	0
Lucas, C. J., Warnham Court, Horsham	1	0	0
McIndoe, J., Hutton Hall Gardens, Guisborough	1	0	0
Masterson, J., Weston House Gardens, Shipton-on-Stour	0	5	0
Mills, M., Coombe Gardens, Croydon	0	2	6
Nicholson, J., Sewardstone Lodge Gardens, Chingford	0	5	0
Orr, H. A., Bedford	2	2	0
Pearson & Sons, J. R., Chilwell, Notts	6	5	0
Peed & Sons, J., Roupell Park Nurseries, W. Norwood, S.E.	2	2	0
Pentney, A., Worton Hall Gardens, Isleworth	0	6	0
Perkins & Sons, T., Northampton	1	1	0
Rivers & Son, T., Sawbridgeworth, Herts	5	5	0
Rogers, J. H., Glyncod, Llanelly	1	1	0
Rothschild, Leopold de, New Court, St. Swithin's Lane, E.C.	3	3	0
Salmon, W., Elder Road, W. Norwood	0	5	0
Salmon, Mrs. W., Elder Road, W. Norwood	0	5	0
Sanders, R. C., Halton Gardens, Tring	0	10	6
Schröder, Baron, The Dell, Staines	5	0	0
Sherwood, N. N., Dunedin, Streatham	1	1	0
Slogrove, William, Gattton, Reigate	0	5	0
Smith, Martin, R., Warren House, Hayes, Kent	2	0	0
Smith, R., Shrewsbury	0	10	6
Spooner & Sons, S., Hounslow	1	1	0
Sutton & Sons, Reading	5	0	0
Sydenham, R., Tenby Street, Birmingham	2	2	0
Thomas, Owen, Royal Gardens, Windsor	1	1	0
Tidy, W., Stanmore Hall Gardens, Middlesex	0	5	0
Turton, T., Maiden Erlegh, Reading	0	10	6
Vokins, W., 62 The Drive, West Brighton	1	1	0
Walker, J., Ham Common, Surrey	1	1	0
Ward, H. W., Longford Castle, Salisbury	0	10	6
Watkins, John, Pomona Farm, Withington, near Hereford	1	1	0
Wells, B., Crawley	0	10	0
Wells, W., Bridgen Place Gardens, Bexley	0	5	0
Wheeler & Son, J. C., Kingsholm Nursery, Gloucester	1	1	0
Whiteley, William, Westbourne Grove	1	1	0
Wilks, Rev. W., Shirley Vicarage, Croydon	1	1	0
Woodward, Geo., Barham Court Gardens, Teston, Maidstone	0	10	0
Wyatt, A., Hatton, Middlesex	0	10	6

Besides the above, Messrs. James Veitch & Sons, Chelsea, gave Special Prizes for the best flavoured Apples and Pears

(Classes 136 and 137)—prizes which they repeat at every Meeting of the Society from July, 1896, to July, 1898. The Worshipful Company of Fruiterers also offered two Gold Medals; and a large Silver Medal was given by the Williams Memorial Trustees.

The Prizes given by Messrs. George Bunyard & Co., of Maidstone, were given in celebration of the centenary of the foundation of their firm, and cannot, therefore, be looked for again, making it all the more necessary for the friends of British fruit growing to make up the deficiency for 1897.

The following table may be interesting as comparing the number of dishes of each fruit exhibited in the three years during which the Show has been held. In each case only the exhibits for competition under the schedule have been included, it having been found impossible to enumerate everything contained in the miscellaneous exhibits not for competition.

Dishes of	1894	1895	1896
Apples	1,027	1,938	1,083
Apricots	2	1	1
Banana	—	1	—
Bullace	5	3	1
Cherries	7	12	6
Damsons	6	18	4
Figs	4	9	7
Gooseberries	1	—	—
Grapes	105	97	135
Medlars	—	2	3
Melons	—	10	7
Nectarines	15	18	4
Nuts	—	26	19
Passiflora	—	—	1
Peaches	51	80	24
Pears	829	779	795
Pines	—	—	5
Plums	90	101	38
Quinces	6	14	17
Tomatos	—	67	2
Total	2,148	3,176	2,152
Entries for prizes	1,301	1,783	1,234
Visitors	23,680	36,293	26,499

For the following table we are indebted to the kindness of the Editor of the *Gardeners' Magazine* :—

APPLES.

Varieties.	Dishes.	Varieties.	Dishes.
Cox's Orange	75	Lord Grosvenor	6
Ribston Pippin	51	Rosemary Russet	6
King of the Pippins	45	Belle de Pontoise	5
Warner's King	41	Blenheim Pippin	5
Emperor Alexander	34	Colonel Vaughan	5
Peasgood's Nonsuch	33	Grenadier	5
Lane's Prince Albert	33	Lady Henniker	5
Worcester Pearmain	31	Reinette du Canada	5
Blenheim Orange	28	Tyler's Kernel	5
Cox's Pomona	27	Striped Beefing	5
Lord Derby	27	Beauty of Hants	4
Bismarck	22	Calville Rouge	4
Mère de Ménage	21	Duchess' Favourite	4
Cellini	21	Frogmore Prolific	4
The Queen	20	Jefferson	4
Golden Noble	19	Melon	4
Stone's	18	New Northern Greening	4
Wellington	18	Adam's Pearmain	4
Baumann's Red	18	Wealthy	4
Bramley's Seedling	17	Winter Peach	4
Fearn's Pippin	17	Winter Queening	4
American Mother	17	Gravenstein	4
Gascoyne's Scarlet	16	Cornish Gilliflower	4
Lord Suffield	15	Braddick's Nonpareil	4
Alfriston	15	Barnack Beauty	4
Pott's Seedling	14	Red Bietigheimer	3
Gloria Mundi	14	Manx Codlin	3
Margil	13	Duke of Devonshire	3
Washington	13	Mrs. Barron	3
Yellow Ingestrie	13	Tibbett's Pearmain	3
Newton Wonder	12	Cockle Pippin	3
Court Pendu Plat	12	Twenty Ounce	3
Stirling Castle	12	Winter Ribston	3
Ecklinville	12	Keswick Codlin	2
Tower of Glamis	12	Duchess of Oldenburg	2
Sandringham	12	Gold Medal	2
Sturmer	11	King of Tomkins County	2
Scarlet Nonpareil	11	Lady Sudeley	2
New Hawthornden	11	White Apple	2
Golden Spire	10	Small's Admirable	2
Mabbott's Pearmain	9	Wormsley Pippin	2
Claygate Pearmain	8	Cornish Giant	2
Kerry Pippin	8	Scarlet Pearmain	2
Beauty of Kent	8	Winter Hawthornden	2
Royal Jubilee	8	Town Pippin	2
Waltham Abbey Seedling	8	Minchin Crab	2
Brownlee's Russet	7	Dolphin	2
Hollandbury	6	Silver Russet	2
Annie Elizabeth	6	Seaton House	2
Hoary Morning	6	Dutch Codlin	2
Hormead Pearmain	6	Spencer's Favourite	2
Mannington Pearmain	6	Autumn Pearmain	1

Varieties.	Dishes.	Varieties.	Dishes.
Allington Pippin	1	Norfolk Black Jack	1
Allen's Everlasting	1	Catshead	1
Bedford Foundling	1	Wiltshire Defiance	1
Calville Blanche	1	Tibbett's Incomparable	1
Castle Major	1	Lewis' Incomparable	1
Chatley's Kernel	1	Withington Fillbasket	1
Dutch Mignonne	1	Court of Wick	1
Foster's Seedling	1	Monmouthshire Beauty	1
Hambledon Deux Ans	1	Silver Pippin	1
Hambling's Seedling	1	Farmers' Seedling	1
James Grieve	1	Baillie Nelson	1
Norfolk Beefing	1	Vicar of Beighton	1
Okerá	1	Brabant Bellefleur	1
Old Russet	1	St. Lawrence	1
Bow Hill Pippin	1	Rambour Papelin	1
Kentish Pippin	1	Flanders Pippin	1
Betty Geeson	1	Maiden's Blush	1
Devonshire Quarrenden	1	Grand Duke Constantine	1
Queen Anne	1	Wadhurst Pippin	1
Egremont Russet	1	Eve	1
Golden Russet	1	Golden Reinette	1
Schoolmaster	1	Yorkshire Greening	1
Swedish Reinette	1	Stock Liddington	1
Tom Putt	1	Evan's White	1
Williams' Favourite	1	Galloway Pippin	1
Wyken Pippin	1	Scarlet Incomparable	1
Cornish Aromatic	1	Hanwell Souring	1
Northern Spy	1	Reinette d'Osnabruck	1
Yorkshire Beauty	1	Murfit's Seedling	1
Sam Young	1	Prince of Wales	1
Sir J. Banks	1		
Pigeonette	1	Total	1,083
Hackwood Beauty	1		

APRICOTS.

Moor Park	1
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BULLACES.

Bullace	1
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CHERRIES.

Morello	5	Late Duke	1
		Total	6

DAMSONS.

Common	1	Prune	1
Cheshire	1		
Farleigh	1	Total	4

FIGS.

Brown Turkey	4	Bourjasotte Grise	1
Negro Largo	2	Total	7

GRAPES.

Varieties.	Dishes.	Varieties.	Dishes.
Muscat of Alexandria	30	Appley Towers	2
Alicante	24	Trebbiano	1
Gros Maroc	14	Mill Hill Black Hamburgh	1
Black Hamburgh	12	Muscat Hamburgh	1
Madresfield Court	12	Buhardt's Tessel	1
Lady Downes	8	White Frontignan	1
Foster's Seedling	7	Miller's Burgundy	1
Mrs. Pince	5	Gros Guillaume	1
Gros Colmar	4	Canon Hall Muscat	1
Buckland Sweetwater	3	Sweetwater	1
Mrs. Pearson	3		—
Duke of Buccleuch	2	Total	135

MEDLARS.

Medlars	3
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MELONS.

Hero of Lockynge	2	Golden Drop	1
Royal Favourite	1	Unnamed	1
Countess	1		—
High Cross Hybrid	1	Total	7

NECTARINES.

Byron	2	Victoria	1
Humboldt	1		—
		Total	4

NUTS.

Walnut	7	Webb's Prize Cob	1
Kentish Cob	4	Webb's Champion Cob	1
Hazel Nut	2	Barcelona	1
Chestnut	2		—
Almond	1	Total	19

PASSIFLORA.

Passiflora edulis	1
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PEACHES.

Sea Eagle	6	Walburton Admirable	1
Lady Palmerston	3	Princess of Wales	1
Nectarine	2	Bellegarde	1
Lord Palmerston	2	Thomas	1
Golden Eagle	2	Late Admirable	1
Exquisite	2		—
Salway	1	Total	24

PEARS.

Pitmaston Duchess	55	Glou Morceau	25
Marie Louise	40	Easter Beurre	20
Doyenne du Comice	39	Beurre Hardy	24
Beurre Diel	38	Beurre Superfin	24
Durondeau	36	Joséphine de Malines	20
Louise Bonne of Jersey	33	Uvedale's St. Germain	17
Duchesse d'Angoulême	28	Beurre Clairgeau	16
Winter Nelis	25	Beurre Bachelier	14

Varieties.	Dishes.	Varieties.	Dishes.
Beurre Bosc	14	Beurre Sterckmans	2
Bergamotte Esperen	14	Vineuse	2
Maréchal de Cour	13	Nouveau Poiteau	2
Souvenir du Congrès	12	Autumn Bergamotte	2
Emile d'Heyst	11	Soldat Laboureur	2
General Todtleben	9	Triomphe de Vienne	2
Marie Louise d'Uccle	8	Zephirin Gregoire	2
Beurre Rance	8	Huyshe's Prince of Wales	2
Nouvelle Fulvie	8	Flemish Beauty	2
Thompson's	8	The Popham	1
Brockworth Park	8	Fondante de Richard	1
Gansel's Bergamotte	7	Iris Gregoire	1
Hacon's Incomparable	7	Triomphe de Jodoigne	1
Van Mons Léon le Clerc	7	Marguerite Marrillat	1
Catillac	7	Beurre Benoist	1
Brown Beurre	6	Beurre du Buisson	1
Beurre Baltet Père	6	Clapp's Favourite	1
Grosse Calabasse	6	Fertility	1
Princess	6	Black Worcester	1
Seckle	6	Marshal Soult	1
Vicar of Winkfield	6	Doyenne de Mérode	1
Baronne de Mello	5	Nec Plus Meuris	1
Monarch	5	Beurre Perran	1
Marie Benoist	5	British Queen	1
President Osmonville	5	Poire Douce	1
Beurre d'Anjou	5	Prince Consort	1
Fondante d'Automne	5	Dr. Trosseau	1
Beurre Jean van Geert	4	Beurre Dumont	1
Chaumontel	4	Madame Chaudy	1
Conference	4	Olivier de Serres	1
Doyenne Boussoch	4	Madame Treyve	1
Fondante de Thirriott	4	Beurre d'Amanlis	1
King Edward	3	Beurre de Jonghe	1
Madame André Leroy	3	Directeur Alphand	1
Broom Park	3	Directeur Joubert	1
Gilogil	3	Summer Compôte	1
Comte de Flanders	3	Huyshe's Victoria	1
Urbaniste	3	Turc's Bon Chrétien	1
Verulam	3	Benedictine	1
Magnate	3	Comte de Lamy	1
Forelle	3	Green Yair	1
Duchesse de Bordeaux	3	Swan's Egg	1
Bellissime d'Hiver	3	Grand Soleil	1
Beurre Fouquerey	3	Althorp Crassane	1
Beurre Alexander Lucas	3	Williams' Victoria	1
Prince Napoleon	3	Hessle	1
Passe Crasanne	3	Stevenstone	1
Belle Julie	3	Autumn Nelis	1
Capiaumont	3		
Beurre d'Aremberg	3		
Passe Colmar	3	Total	795

PINEAPPLES.

Smooth Cayenne	2	Black Jamaica	1
Charlotte Rothschild	2		—
		Total	5

PLUMS.

Varieties.	Dishes.	Varieties.	Dishes.
Coe's Golden Drop	10	Impérial de Milan	1
Monarch	6	Bray's Green Gage	1
Bryanstone Green Gage	4	Wyedale	1
Jefferson	3	Magnum Bonum	1
Diamond	2	Cox's Emperor	1
Belle de Septembre	2	Late Transparent Gage	1
Reine Claude de Bavay	2	Late Black Orleans	1
Kirke's	1		
Pond's Seedling	1	Total	38

QUINCES.

Quinces	17
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TOMATOS.

Conference	1	Early July	1
		Total	2

PRIZE LIST.

DIVISION I.

Fruits grown under Glass or otherwise.

Open to Gardeners and Amateurs only.

Class 1.—Collection of 12 dishes of Ripe Fruit; not less than 6 kinds, nor more than 1 Black and 1 White Grape, or than 2 varieties of any other kind.

First Prize, Williams Memorial Medal and £7. 10s., to Lord Harrington, Derby (gr. J. H. Goodacre).

Second Prize, £5, to Lady H. Somerset, Ledbury (gr. F. Harris).

Third Prize, £2. 10s., to Sir Joseph Pease, M.P., Guisborough (gr. J. McIndoe).

The First Prize Collection contained: 2 Pines, 'Cayenne' and 'Jamaica'; 1 Peach, 'Golden Eagle'; 2 Melons, 'Countess' and 'Hero of Lockinge'; 2 Grapes, 'Alicante' and 'Muscat of Alexandria'; 2 Apples, 'Cox's Orange,' and 'Washington'; 2 Pears, 'Beurré Hardy' and 'Pitmaston Duchess'; 1 Plum, 'Monarch.'

The Second Collection contained: 1 Pine, 'Smooth Cayenne'; 2 Peaches, 'Nectarine' and 'Lord Palmerston'; 2 Melons, 'High Cross Hybrid' and 'Royal Favourite'; 2 Grapes, 'Muscat of Alexandria' and 'Madresfield Court'; 1 Apple, 'Worcester Pearmain'; 1 Pear, 'Pitmaston Duchess'; 1 Plum, 'Coe's Golden Drop'; 1 Fig, 'Brown Turkey'; 1 Cherry, 'Morello.'

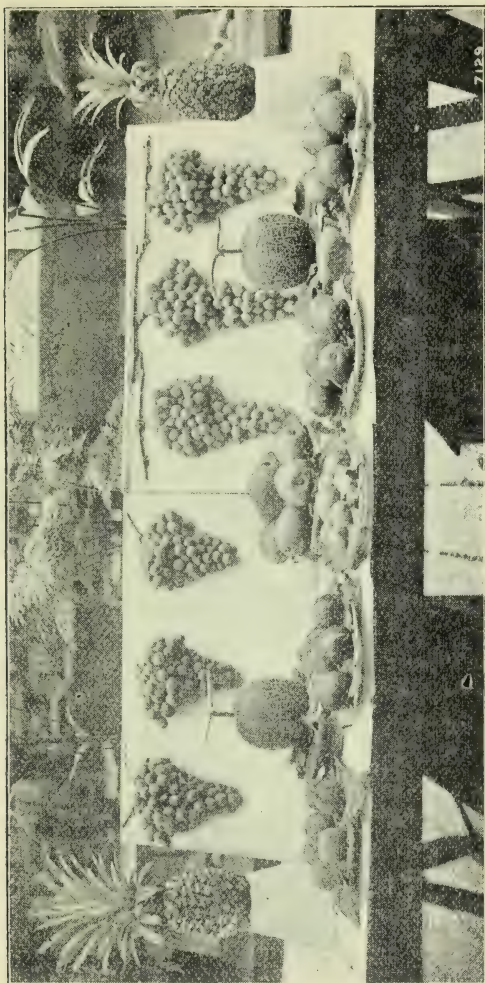


Fig. 15.—THE EARL OF HARRINGTON'S FIRST PRIZE COLLECTION, CLASS 1 (GR. MR. J. H. GOODACRE).
(From the *Gardeners' Magazine*.)

The Third Collection contained: 2 Pines, 'Charlotte Rothschild'; 2 Peaches, 'Sea Eagle' and 'Exquisite'; 1 Melon, 'Golden Drop'; 2 Grapes, 'Foster's Seedling' and 'Gros Maroc'; 1 Apple, 'Washington'; 2 Pears, 'Doyenne du Comice' and 'Triomphe de Vienne'; 1 Plum, 'Bryanstone Gage'; 1 Nectarine, 'Orange.'

Class 2.—Collection of 8 dishes of Ripe Fruit; not less than 4 kinds, nor more than 1 Black and 1 White Grape, or than 2 varieties of any other kind. Pines excluded.

First Prize, £5, to W. K. D'Arcy, Stanmore (gr. W. Tidy).

Second Prize, £3, to Mrs. Wingfield, Ampthill (gr. W. J. Empson).

The First Collection contained: 1 Peach, 'Late Admirable'; 1 Melon, 'Seedling'; 2 Grapes, 'Alnwick Seedling' and 'Muscat of Alexandria'; 1 Apple, 'Ribston'; 2 Pears, 'Louise Bonne' and 'Pitmaston Duchess'; 1 *Passiflora edulis*.

The Second Collection contained: 1 Peach, 'Sea Eagle'; 1 Melon, 'Hero of Lockinge'; 2 Grapes, 'Alicante' and 'Muscat of Alexandria'; 1 Apple, 'Lady Sudeley'; 1 Pear, 'Durondeau'; 1 Plum, 'Jefferson'; 1 Fig, 'Brown Turkey.'

Class 3.—Grapes, 6 distinct varieties, 2 bunches of each, both Black and White must be represented.

First Prize, £5, to C. Bayer, Esq., Forest Hill (gr. W. Taylor).

Second Prize, £3, to Messrs. de Rothschild, Acton (gr. G. Reynolds).

Third Prize, £2, to Lord Harrington, Derby (gr. J. H. Goodacre).

The First Collection contained: 'Muscat of Alexandria,' 'Madresfield Court,' 'Alicante,' 'Trebiano,' 'Gros Colmar,' 'Gros Maroc.'

The Second Collection contained: 'Muscat of Alexandria,' 'Madersfield Court,' 'Alnwick Seedling,' 'Alicante,' 'Buckland Sweetwater,' 'Gros Maroc.'

The Third Collection contained: 'Mrs. Pearson,' 'Muscat of Alexandria,' 'Mrs. Pince,' 'Lady Downes' Black,' 'Alicante,' 'Gros Colmar.'

Class 4.—Grapes, 3 distinct varieties, 2 bunches of each.

First Prize, £2. 10s., to Alderman Chaffin, Bath (gr. W. Taylor).

Second Prize, £1. 10s., to Lady H. Somerset (gr. F. Harris).

Third Prize, £1, to Sir G. Russell, M.P., Reading (gr. F. Cole).

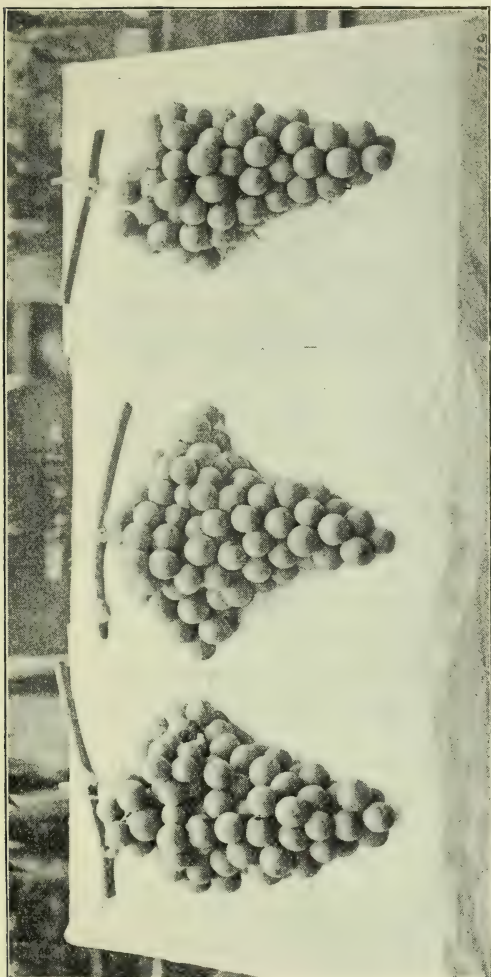


Fig. 16. — ALDERMAN CHAFFIN'S FIRST PRIZE GROS MAROC GRAPES, CLASS 7 (GR. MR. W. TAYLOR).
(From the *Gardeners' Magazine*.)

The First Collection contained: 'Muscat of Alexandria,' 'Madresfield Court,' 'Gros Maroc.'

The Second Collection contained: 'Muscat of Alexandria,' 'Gros Colmar,' 'Gros Maroc.'

The Third Collection contained: 'Muscat of Alexandria,' 'Black Hamburgh,' 'Alicante.'

Class 5.—Grapes, Black Hamburgh, 3 bunches.

First Prize, £1. 10s., to C. Bayer, Esq., Forest Hill (gr. W. Taylor).

Second Prize, £1, to J. W. Fleming, Romsey (gr. J. Mitchell).

Third Prize, 10s., to Hon. F. W. Buxton, Sawbridgeworth (gr. W. H. Godden).

Class 6.—Grapes, Madresfield Court, 3 bunches.

First Prize, £1. 10s., to Alderman Chaffin, Bath (gr. W. Taylor).

Second Prize, £1, to C. Bayer, Esq., Forest Hill (gr. W. Taylor).

Third Prize, 10s., to Mrs. Wingfield, Amptill (gr. W. J. Empson).

Class 7.—Grapes, Gros Colmar or Gros Maroc, 3 bunches of either.

First Prize, £1. 10s., to Alderman Chaffin, Bath (gr. W. Taylor).

Second Prize, £1, to Lord Harrington, Derby (gr. J. H. Goodacre).

Third Prize, 10s., to Messrs. de Rothschild, Acton (gr. G. Reynolds).

The First and Third won with 'Gros Maroc,' the Second with 'Gros Colmar.'

Class 8.—Grapes, Alicante, 3 bunches.

First Prize, £1. 10s., to W. K. D'Arcy, Esq., Stanmore (gr. W. Tidy).

Second Prize, £1, to Alderman Chaffin (gr. W. Taylor).

Third Prize, 10s., to Mr. J. Bury, Byfleet.

Class 9.—Grapes, Lady Downes (Black), 3 bunches.

First Prize, £1. 10s., to W. K. D'Arcy, Esq. (gr. W. Tidy).

Second Prize, £1, to Mr. A. Kemp, Horsham.

Third Prize, 10s., to Col. Horace Walpole (gr. A. Maxim).

Class 10.—Grapes, any other Black Grape, 3 bunches.

First Prize, £1. 10s., to W. K. D'Arcy, Esq. (gr. W. Tidy).

Second Prize, £1, to C. Bayer, Esq. (gr. W. Taylor).

Third Prize, 10s., to J. W. Fleming, Esq. (gr. W. Mitchell).

The First Prize was won with 'Alnwick Seedling,' the Second with 'Gros Guillaume,' the Third with 'Mrs. Pince.'

Class 11.—Grapes, Muscat of Alexandria, 3 bunches.

First Prize, £2, to W. K. D'Arcy, Esq. (gr. W. Tidy).

Second Prize, £1. 10s., to Sir George Russell, M.P. (gr. F. Cole).

Third Prize, 15s., to F. A. Bevan, Esq., New Barnet (gr. W. H. Lees).

Class 12.—Grapes, any other White Grapes, 3 bunches.

First Prize, £1. 10s., to Alderman Chaffin (gr. W. Taylor).

Second Prize, £1, to Messrs. de Rothschild (gr. G. Reynolds).

Third Prize, 10s., to Mrs. Wingfield (gr. W. J. Empson).

The First Prize was won with 'Canon Hall,' the Second and Third with 'Foster's Seedling.'

Class 13.—Figs, 1 dish of one variety.

First Prize, 10s., to T. W. Erle, Esq., Liphook (gr. P. H. Edwards).

Class 14.—Collection of Hardy Fruit, not exceeding 50 dishes, grown entirely in the open.

First Prize, Gold Medal. Withheld.

Second Prize, £3, to Mr. A. Wyatt, Hatton.

Third Prize, £1. 10s., to Lord Foley, Esher (gr. J. Miller).

Class 15.—Collection of Hardy Fruits, not exceeding 36 dishes, grown partly or entirely under glass to illustrate Orchard House Culture.

First Prize, £4. 10s., to Sir Joseph Pease, M.P. (gr. J. McIndoe).

Second Prize, £3, to J. W. Melles, Chingford (gr. Nicholson).

The First Prize Collection contained: 2 Grapes, 'Buckland Sweetwater' and 'Gros Maroc'; 2 Figs, 'Negro Largo' and 'Brown Turkey'; 1 Apricot, 'Moor Park'; 2 Nectarines, 'Humboldt' and 'Byron'; 1 Cherry, 'Late Duke'; 3 Plums, 'Magnum Bonum,' 'Coe's Golden Drop,' and 'Bryanstone'; 4 Peaches, 'Bellegarde,' 'Golden Eagle,' 'Sea Eagle,' and 'Exquisite'; 9 Pears, 'Beurre Superfin' 'Doyenne Boussoch,' 'Beurre Clairgeau,' 'Baltet Père,' 'Doyenne du Comice,' 'Triomphe de Vienne,' 'Pitmaston Duchess,' 'Durondeau,' and 'Beurre d'Amanlis'; 9 Apples, 'Wadhurst Pippin,' 'Maiden's Blush,' 'Cox's Orange,' 'Bietigheimer,' 'Grand Duke Constantine,' 'King of Tomkin's County,' 'Worcester Pearmain,' 'Melon,' and 'Calville Rouge.'

The Second Collection contained: 18 Pears, 'Marie Louise d'Uccle,' 'Doyenne Boussoch,' 'Pitmaston Duchess,' 'Passe

Colmar,' 'Beurre Diel,' 'Doyenne du Comice,' 'Duchesse d'Angoulême,' 'White Doyenne,' 'Triomphe de Jodoigne,' 'General Todtleben,' 'Durondeau,' 'Van Mons Léon Leclerc,' 'Bellissime d'Hiver,' 'Uvedale's St. Germain,' 'Fondante de Richard,' 'Magnate,' 'Beurre Superfin,' and 'Vicar of Winkfield'; 17 Apples, 'Waltham Abbey,' 'Hollandbury,' 'Blenheim Orange,' 'Peasgood's Nonsuch,' 'Lord Derby,' 'Mère de Ménage,' 'Warner's King,' 'Emperor Alexander,' 'Alfriston,' 'Gloria Mundi,' 'Tower of Glamis,' 'Ribston,' 'Gravenstein,' 'Cellini,' 'Worcester Pearmain,' 'Cox's Orange,' and 'Washington.'

DIVISION II.

Open to Nurserymen only.

Class 16.—Collection of Fruit Trees bearing fruit, in pots.

First, Second, and Third Prizes, Gold, Silver Gilt, or Silver Medals.

N.B.—Gathered Fruit and Nuts may be placed in the space between the pots, but will not be taken into account by the Judges.

No competition.

Class 17.—Collection of Hardy Fruits, grown partly or entirely under glass, to illustrate Orchard House Culture.

First Prize, Silver Gilt Knightian Medal, to Messrs. G. Bunyard & Co., Maidstone.

This exhibit occupied a table by itself and was extremely fine. The centre was formed of little trees in pots—Apples, Figs, and Vines—all bearing good crops of fruit. Around the trees were grouped baskets of beautiful bunches of Grapes—'Appley Towers,' 'White Frontignan,' 'Gros Colmar,' and 'Gros Maroc,' with a few varieties of Peaches, Tomatos, and Figs. The remainder of the space was occupied with dishes of superb specimens of Apples and Pears. When all were perfect it is difficult to specify any, but among the Apples perhaps the most surprising were 'Emperor Alexander,' 'The Queen,' 'Warner's King,' 'Beauty of Kent,' 'Mère de Ménage,' 'Twenty Ounce,' 'Gascoyne's Scarlet,' 'Belle Pontoise,' 'Calville Rouge Précoce,' 'King of Tomkin's County,' 'Washington,' 'Cox's Pomona,' 'Ribston,' 'Gloria Mundi,' 'Peasgood's Nonsuch,' 'Mother,' 'Lady Henniker,' 'Wealthy,' 'Sandringham,' 'Lane's Prince

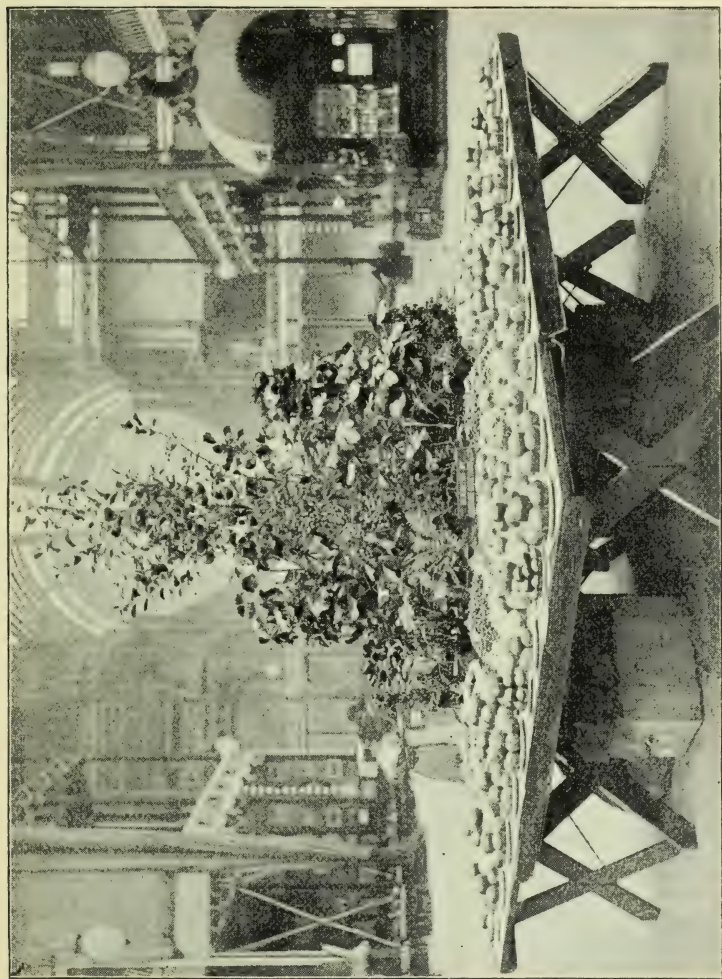


Fig. 17. — MESSRS. G. BUNYARD & CO.'S FIRST PRIZE ORCHARD HOUSE FRUIT, CLASS 17.
(From the *Gardeners' Magazine*.)

Albert,' 'Fearn's Pippin,' 'Cox's Orange,' 'Bramley's Seedling,' 'Aker,' 'Braddick's Nonpareil,' 'Blenheim Orange,' 'Rosemary Russet,' 'Tibbett's Pearmain,' 'Bismarck,' 'Cornish Gilliflower'; and amongst the Pears, 'Pitmaston Duchess,' 'Jean van Geert,' 'Doyenne du Comice,' 'Beurre Rance,' 'Clairgeau,' 'Marie Benoist,' 'President Osmanville,' 'Durondeau,' 'Beurre Fouqueray,' 'Conference,' 'Gilgil,' 'Directeur Alphand,' 'Marie Louise,' 'Beurre Dumont.'

Class 18.—Collection of not less than 75, or more than 100, distinct varieties of Hardy Fruits, in baskets or dishes, grown entirely in the open air; to be arranged on a table of about 24 ft. by 6 ft. or an equivalent space; Foliage Plants may be added and branches of any fruit-bearing trees or bushes.

First Prize, Gold Medal (given by the Fruiterers' Company), to Messrs. G. Bunyard & Co., Maidstone.

This splendid collection, well worthy of the honour it received, consisted entirely of magnificent Apples and Pears, with the exception of two dishes of Grapes, 'Sweetwater' and 'Miller's Burgundy,' and two dishes of Plums, 'Wyedale' and 'Cheshire Damson.'

Again it is difficult to specify when all were so remarkable, but amongst the Apples (besides those mentioned under Class 17) were fine specimens of 'Lord Grosvenor,' 'Frogmore Prolific,' 'Waltham Abbey,' 'Annie Elizabeth,' 'Worcester Pearmain,' 'Allington Pippin,' 'Cellini,' 'Newton Wonder,' 'Tyler's Kernel,' 'Stone's,' 'Lord Derby'; and amongst the Pears, 'Baltet Père,' 'Duchesse d'Angoulême,' 'King Edward,' 'Louise Bonne,' 'Emile d'Heyst,' 'Marie Louise d'Uccle.'

Class 19.—Collection of not less than 30, or more than 50, distinct varieties of Hardy Fruits, in baskets or dishes, grown entirely in the open air; to be arranged on a table of about 24 ft. by 3 ft. or an equivalent space; Foliage Plants may be added, and branches of any fruit-bearing trees or bushes.

First Prize, Silver Gilt Knightian Medal, to Mr. H. Berwick, Sidmouth.

Mr. Berwick staged a grand collection of large and highly coloured Apples and Pears, mostly in large basketfuls. Amongst the Apples the most remarkable were 'Peasgood's Nonsuch,'

'Cox's Pomona,' 'Warner's King,' 'Mère de Ménage,' 'Annie Elizabeth,' 'Blenheim Orange,' 'Golden Noble,' 'The Queen,' 'Bismarck,' 'Ribston,' 'Jefferson,' 'Cox's Orange,' 'Autumn Pearmain,' 'Hoary Morning,' 'Tyler's Kernel'; and amongst the Pears, 'Grosse Calebasse,' 'Beurre Hardy,' 'Duchesse d'Angoulême,' 'Huyshe's Prince of Wales,' 'Clairgeau,' 'Maire Louise,' 'Van Mons Léon Leclerc.'

Mr. A. Wyatt, Hatton, secured the second prize, a Silver Knightian Medal, with a fine collection.

Class 20.—Collection of not less than 30, or more than 50, distinct varieties of Pears, in baskets or dishes, grown entirely in the open air; to be arranged on a table of about 24 ft. by 3 ft. or an equivalent space; Foliage Plants may be added and branches of any fruit-bearing trees or bushes.

First Prize Silver Gilt Knightian Medal, to Messrs. George Bunyard & Co., Maidstone.

A collection of Pears as large and clean and well coloured as has probably ever been seen together. The varieties were: 'Souvenir du Congrès,' 'Conference,' 'Poire d'Auch,' 'Madame Chaudy,' 'Grosse Calebasse,' 'Brockworth Park,' 'Zephirin Gregoire,' 'Emile d'Heyst,' 'Marie Benoist,' 'Princess,' 'Doyenne du Comice,' 'Baronne de Mello,' 'Duchesse d'Angoulême,' 'President Osmanville,' 'Comte de Flandres,' 'Baltet Père,' 'Gilogil,' 'Jean Van Geert,' 'Brown Beurre,' 'Beurre Fouqueray,' 'Pitmaston Duchess,' 'Broom Park,' 'Beurre Bachelier,' 'Fertility,' 'Clairgeau,' 'Duchesse de Bordeaux,' 'Vicar of Winkfield,' 'Madame André Leroy,' 'Marguerite Marrillat,' 'Maréchal de Cour,' 'Beurre Benoist,' 'Vineuse,' 'Durondeau,' 'King Edward,' 'Catillac,' 'Marie Louise d'Uccle,' 'Fondante de Thirriott,' 'Beurre de Jonghe,' 'Beurre Hardy,' 'Magnate,' 'Bellissime d'Hiver,' 'Beurre Superfin,' 'General Todtleben,' 'Beurre du Buisson,' 'Uvedale's St. Germain,' 'Belle Julie,' 'Louise Bonne,' 'Beurre Diel,' 'Nouveau Poiteau,' 'Marie Louise.'

Mr. Berwick, of Sidmouth, won the Second Prize, a Silver Knightian Medal, with an exhibit which did him the utmost credit, and would at most Shows have easily secured the premier position.

Class **21.**—Collection of not less than 30, or more than 50, distinct varieties of Apples, in baskets or dishes, grown entirely in the open air ; to be arranged on a table of about 24 ft. by 3 ft. or an equivalent space ; Foliage Plants may be added and branches of any fruit-bearing trees or bushes.

First Prize, Silver Gilt Knightian Medal, to Messrs. George Bunyard & Co., Maidstone.

A superb collection of very large, heavy, and highly coloured fruits. The varieties were 'The Queen,' 'Gold Medal,' 'Striped Beefing,' 'Peasgood's Nonsuch,' 'Waltham Abbey,' 'Bowhill Pippin,' 'Lord Grosvenor,' 'Cellini Pippin,' 'Tower of Glamis,' 'King of Tomkin's County,' 'Hambling's Seedling,' 'Twenty Ounce,' 'Stirling Castle,' 'Wealthy,' 'Tyler's Kernel,' 'Castle Major,' 'Ecklinville,' 'Mère de Ménage,' 'New Hawthornden,' 'Murfitt's Seedling,' 'Worcester Pearmain,' 'Lord Derby,' 'Baumann's Red,' 'Gloria Mundi,' 'Cox's Pomona,' 'Mrs. Barron,' 'Lady Henniker,' 'Warner's King,' 'Newton Wonder,' 'Cornish Giant,' 'Royal Jubilee,' 'Grenadier,' 'Hormead Pearmain,' 'Bismarck,' 'Bramley's Seedling,' 'Gascoyne's Scarlet,' 'Pott's Seedling,' 'Bietigheimer,' 'Alexander,' 'Winter Ribston,' 'Stone's,' 'Golden Spire,' 'Lane's Prince Albert,' 'Foster's Seedling,' 'Washington,' 'Belle Pontoise,' 'Manx Codlin,' 'Lord Suffield,' 'Farmer's Seedling,' and 'Golden Noble.'

Mr. John Basham, Bassaleg, Monmouth, received the Second Prize, a Silver Knightian Medal, for a very meritorious exhibit, some of the dishes being remarkably fine.

Class **22.**—Collection of fruit-bearing branches or sprays, of any kind or variety, of various fruit bushes or trees ; to occupy a table not exceeding 24 ft. by 3 ft.

First Prize, £3 ; Second Prize, £2 ; Third Prize, £1.

No competition.

DIVISION III.

Fruits grown in the Open Air.

Open to Gardeners and Amateurs only.

Class **23.**—Apples, 24 dishes, distinct, 16 Cooking, 8 Dessert. The latter to be placed in the front row.

(Prizes given by Messrs. George Bunyard & Co., the Royal Nurseries, Maidstone, as Bunyard Centenary Prizes.)

First Prize, £5, to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, £4, to J. Colman, Esq. (gr. W. King).

Third Prize, £3, to T. Oliverson, Esq. (gr. W. Lewis).

The First Prize Collection contained: 1, 'Bramley's Seedling'; 2, 'Belle Dubois'; 3, 'Emperor Alexander'; 4, 'Peasgood's Nonsuch'; 5, 'Mère de Ménage'; 6, 'Lord Derby'; 7, 'The Queen'; 8, 'Golden Noble'; 9, 'Beauty of Kent'; 10, 'Warner's King'; 11, 'Stone's'; 12, 'Alfriston'; 13, 'Prince Albert'; 14, 'Reinette du Canada'; 15, 'Baumann's Red'; 16, 'Cox's Orange'; 17, 'Washington'; 18, 'Melon'; 19, 'Mother'; 20, 'Brownlee's Russet'; 21, 'Ribston'; 22, 'Bismarck'; 23, 'Waltham Abbey'; and 24, an unnamed Seedling.

The Second Collection contained: 25, 'Hawthornden'; 26, 'Lord Suffield'; 27, 'Blenheim Orange'; 28, 'Stirling Castle'; 29, 'Ecklinville'; 30, 'Cellini'; 31, 'Jefferson'; 32, 'King of the Pippins'; 33, 'Worcester Pearmain'; 34, 'Fearn's Pippin'; 35, 'Cox's Pomona'; 36, 'Irish Giant' (? Warner's King); together with Nos. 1, 4, 6, 7, 8, 9, 10, 13, 16, 19, 21, and 24, as in the last collection.

The Third Collection contained: 37, 'Bedford Foundling'; 38, 'Sandringham'; 39, 'Newton Wonder'; 40, 'Golden Spire'; 41, 'Hoary Morning'; 42, 'Mabbott's Pearmain'; 43, 'Duchess' Favourite'; 44, 'Duke of Devonshire'; together with Nos. 2, 4, 5, 7, 8, 10, 11, 13, 16, 21, 27, 30, 32, 33, 34, 35, as above.

Class 24.—Apples, 12 dishes, distinct, 8 Cooking, 4 Dessert.

First Prize, £2, to J. K. D. Wingfield-Digby, Esq. (gr. W. J. Pragnell).

Second Prize, £1, to Mr. T. W. Startup, Maidstone.

Third Prize, 15s., to Mr. G. H. Sage, Richmond.

The First Collection contained: 45, 'Gascoyne's Scarlet'; 46, 'Annie Elizabeth'; and Nos. 1, 4, 6, 7, 10, 16, 19, 21, 27, 32, as above.

The Second Collection contained: 47, 'Potts' Seedling,' and Nos. 3, 4, 7, 10, 11, 15, 16, 21, 22, 33, 45, as above.

The Third Collection contained: 48, 'Barnack Beauty'; 49, 'Tyler's Kernel'; and Nos. 1, 3, 4, 6, 13, 16, 19, 21, 27, 35, as above.

Class **25.**—Apples, 9 dishes, distinct, 6 Cooking, 3 Dessert.

First Prize, £1. 10s., to Mrs. Crawford (gr. W. Slogrove).

Second Prize, 15s., to Mr. T. Turton, Reading.

Third Prize, 10s., to C. R. W. Adeane, Esq. (gr. J. Hill).

The First Collection contained : Nos. 3, 4, 9, 10, 15, 16, 17, 38, 45, as above.

The Second Collection contained : 49, 'Striped Beefing' ; 50, 'Adams' Pearmain' ; and Nos. 5, 10, 11, 16, 27, 32, 47, as above.

The Third Collection contained : 51, 'Claygate Pearmain' ; 52, 'Tower of Glamis' ; and Nos. 4, 5, 10, 11, 16, 21, 41, as above.

Class **26.**—Cooking Apples, 6 dishes, distinct.

First Prize, £1, to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 15s., to Mr. T. W. Startup, Maidstone.

Third Prize, 10s., to T. Oliverson, Esq. (gr. W. Lewis).

The First Collection contained : Nos. 2, 3, 4, 6, 10, 11, as above.

The Second Collection contained : 53, 'Belle de Pontoise,' and Nos. 4, 10, 23, 45, 47.

The Third Collection contained : Nos. 4, 7, 10, 11, 13, 29.

Class **27.**—Cooking Apples, 3 dishes, distinct.

First Prize, 10s., to H. H. Hurnard, Esq. (gr. J. Bowery).

Second Prize, 7s., to Sir E. G. Loder (gr. G. Goldsmith).

Third Prize, 5s., to Mr. G. H. Sage, Richmond.

The First Collection contained : Nos. 3, 4, 13.

The Second Collection contained : 54, 'Hollandbury,' and Nos. 10, 13.

The Third Collection contained : Nos. 3, 6, 13.

Class **28.**—Dessert Apples, 6 dishes, distinct.

First Prize, £1, to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 15s., to J. Colman, Esq. (gr. W. King).

Third Prize, 10s., to Sir E. G. Loder (gr. G. Goldsmith).

The First Collection contained : 55, 'Calville Præcox,' and Nos. 15, 16, 17, 21, 48.

The Second Collection contained : Nos. 16, 19, 21, 31, 32, 33.

The Third Collection contained : 56, 'Cornish Gilliflower,' and Nos. 16, 19, 21, 32, 33.

Class 29.—Dessert Apples, 3 dishes, distinct.

First Prize, 10*s.*, to G. H. Field, Esq. (gr. R. Edwards).

Second Prize, 7*s.*, to Mr. F. B. Parfitt, Reading.

Third Prize, 5*s.*, to Mr. A. Kemp, Horsham.

The **First** and **Second** Collections contained: Nos. 16, 17, 21.

The **Third** Collection contained: Nos. 16, 19, 21.

Class 30.—Dessert Pears, 24 dishes, distinct. High quality to rank before size.

(Prizes given by Messrs. George Bunyard & Co., the Royal Nurseries, Maidstone, as Bunyard Centenary Prizes.)

First Prize, £6, to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, £4, to Col. Brymer (gr. J. Powell).

Third Prize, £3, to Sir E. G. Loder (gr. G. Goldsmith).

The **First** Collection contained: 1, 'Baltet Père'; 2, 'Marie Louise'; 3, 'Doyenne du Comice'; 4, 'Pitmaston Duchess'; 5, 'Superfin'; 6, 'Emile d'Heyst'; 7, 'Marie Benoist'; 8, 'Beurre Diel'; 9, 'Passe Crassane'; 10, 'Beurre d'Anjou'; 11, 'Duron-deau'; 12, 'Vineuse'; 13, 'Beurre Hardy'; 14, 'King Edward'; 15, 'Fondante Thirriott'; 16, 'Princess'; 17, 'Winter Nelis'; 18, 'Soldat Laboureur'; 19, 'Baronne de Mello'; 20, 'Louise Bonne'; 21, 'Bon Chrétien'; 22, 'Conference'; 23, 'Brown Beurre'; 24, 'Josephine de Malines.'

The **Second** Collection contained: 25, 'Beurre Bachelier'; 26, 'Duchesse d'Angoulême'; 27, 'Gansel's Bergamotte'; 28, 'Glou Morceau'; 29, 'Napoleon'; 30, 'Thompson's'; 31, 'Beurre Rance'; 32, 'Beurre d'Aremberg'; 33, 'Easter Beurre'; 34, 'Knight Monarch'; 35, 'Bergamotte Esperen'; 36, 'Zepherin Grégoire'; and Nos. 2, 3, 4, 5, 6, 8, 9, 11, 17, 20, 23, 24, as above.

The **Third** Collection contained: 37, 'Magnate'; 38, 'Souvenir du Congrès'; 39, 'Alexandre Lucas'; 40, 'Urbaniste'; 41, 'Maréchal de Cour'; 42, 'Beurre Fouqueray'; and Nos. 2, 3, 4, 5, 6, 7, 8, 11, 15, 16, 17, 20, 24, 26, 28, 30, 33, 35.

Class 31.—Dessert Pears, 12 dishes, distinct.

First Prize, £2. 15*s.*, to J. K. D. Wingfield-Digby, Esq. (gr. W. J. Pragnell).

Second Prize, £1. 15*s.*, to Mr. John Warren, Crawley.

Third Prize, £1, to Sir W. Geary (gr. W. Cotterell).

The **First** Collection contained: 43, 'General Todtleben';

44, ' Marie Louise d'Uccle ' ; 45, ' Chaumontel ' ; and Nos. 2, 3, 4, 6, 8, 11, 20, 26, 41.

The Second Collection contained : 46, ' Jean Van Geert ' and Nos. 2, 3, 4, 8, 11, 13, 25, 27, 28, 33, 39.

The Third Collection contained : 47, ' Brockworth Park ' ; 48, ' Beurre Bosc ' ; 49, ' Van Mons Léon Leclerc ' and Nos. 2, 3, 4, 5, 8, 11, 26, 27, 28.

Class 32.—Dessert Pears, 9 dishes, distinct.

First Prize, £2, to J. R. Brougham, Esq. (gr. W. Jones).

Second Prize, £1, to Mr. G. Fennell, Tonbridge.

Third Prize, 15s., to Earl Percy (gr. G. Wythes).

The First Collection contained : Nos. 2, 4, 5, 25, 26, 28, 33, 40, 41.

The Second Collection contained : 48, ' Nouveau Poiteau ' and Nos. 2, 3, 4, 6, 8, 23, 25, 38.

The Third Collection contained : Nos. 1, 4, 8, 11, 18, 23, 25, 28, 48.

Class 33.—Dessert Pears, 6 dishes, distinct.

First Prize, £1. 10s., to Mrs. Crawford (gr. W. Slogrove).

Second Prize, 15s., to Hon. W. Lowther (gr. A. Andrews).

Third Prize, 10s., to H. St. Vincent Ames, Esq. (gr. W. Bannister).

The First Collection contained : 49, ' Fondante de Cuerne ' and Nos. 3, 4, 11, 20, 26.

The Second Collection contained : 50, ' Hacon's Incomparable ' and Nos. 3, 4, 13, 38, 48.

The Third Collection contained : 51, ' Beurre d'Anjou,' and Nos. 3, 4, 8, 11, 38.

Class 34.—Dessert Pears, 3 dishes, distinct.

First Prize, 15s., to A. O. Smith, Esq., East Grinstead (gr. C. Harris).

Second Prize, 10s., to Mr. T. W. Startup, Maidstone.

Third Prize, 5s., to Mr. J. W. Abrahams, Beckenham.

The First Collection contained : Nos. 4, 8, 43.

The Second Collection contained : Nos. 3, 4, 16.

The Third Collection contained : No. 52, ' Belle Julie,' and Nos. 2, 48.

Class 35.—Stewing Pears, 3 dishes, distinct.

First Prize, 15s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 10s., to Sir E. G. Loder, Horsham (gr. G. Goldsmith).

Third Prize, 5s., to Sir W. Geary, Bart., Tonbridge (gr. W. Cotterell).

The First Collection contained : 53, 'Grosse Calebasse' ; 54, 'Uvedale's St. Germain' ; 55, 'Catillac.'

The Second Collection contained : 56, 'Bellissime d'Hiver,' and Nos. 54, 55.

The Third Collection contained : 57, 'Verulam' ; 58, 'Vicar of Winkfield' ; and No. 43.

Class 36.—Stewing Pears, 1 dish, of one variety.

First Prize, 7s., to Capt. Carstairs (gr. C. Ross).

Second Prize, 5s., to H. W. Stock, Esq., Petersham (gr. H. Beames).

Third Prize, 3s., to A. O. Smith, Esq. (gr. C. Harris).

The First and Second won with No. 54.

The Third won with No. 55.

Class 37.—Peaches, 3 dishes, distinct.

First Prize, £1. 10s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, £1, to Col. H. Walpole (gr. A. Maxim).

Third Prize, 10s., to Sir Joseph Pease, M.P., Guisborough (gr. J. McIndoe).

The First and Second Collections contained : 'Sea Eagle,' 'Nectarine,' 'Salway.'

Class 38.—Peaches, 1 dish of one variety.

First Prize, 10s., to R. Sneyd, Esq., Newcastle, Staffs (gr. J. Wallis).

Second Prize, 7s., to F. Burnaby-Atkins, Esq., Sevenoaks (gr. A. Gibson).

Third Prize, 3s., to Lady H. Somerset (gr. F. Harris).

The First won with 'Thomas,' a variety much grown in Florida.

The Second dish was unnamed.

The Third won with 'Lady Palmerston.'

Class 39.—Nectarines, 3 dishes, distinct.

First Prize, £1. 10s. ; Second Prize, £1 ; Third Prize, 10s.

No competition.

Class 40.—Nectarines, 1 dish of one variety.

First Prize, 10s., to Sir J. Pease, M.P. (gr. J. McIndoe).

Second Prize, 7s., to Messrs. de Rothschild, Acton (gr. G. Reynolds).

The First won with 'Biron.'

The Second won with 'Victoria.'

Class 41.—Plums, 4 dishes of Dessert, distinct.

First Prize, £1, to Sir J. Pease, M.P. (gr. J. McIndoe).

Second Prize, 15s., to Mrs. Wingfield, Amptill (gr. W. J. Empson).

The First Collection contained: 'Coe's Golden Drop,' 'Jefferson,' 'Grand Duke,' 'Bryanstone.'

The Second Collection contained: 'Coe's Golden Drop,' 'Jefferson,' 'Grand Duke,' 'Kirke's.'

Class 42.—Plums, 1 dish of Dessert, of one variety, not Gages.

First Prize, 7s., to Lady H. Somerset (gr. F. Harris).

Second Prize, 5s., to Mr. H. C. Prinsep, Uckfield.

Third Prize, 3s., to Lady Fortescue (gr. C. Herrin).

The First, Second, and Third won with 'Coe's Golden Drop.'

Class 43.—Plums, 4 dishes of Cooking, distinct.

First Prize, £1, to Sir Joseph Pease, M.P. (gr. J. McIndoe).

Second Prize, 15s., to Mrs. Wingfield (gr. W. J. Empson).

The First Collection contained: 'Diamond,' 'Magnum Bonum,' 'Pond's Seedling,' 'Belle de Septembre.'

The Second Collection contained: 'Diamond,' 'Monarch,' 'Cox's Emperor,' 'Grand Duke.'

Class 44.—Plums, 1 dish of Cooking, of one variety.

First Prize, 7s., to Mr. H. C. Prinsep, Uckfield.

Second Prize, 5s., to Mr. G. Fennell, Tonbridge.

Third Prize, 3s., to Dowager Lady Freake, Twickenham (gr. A. H. Rickwood).

The First won with 'Monarch.'

The Second won with 'Grand Duke.'

The Third won with 'Impérial de Milan.'

Class 45.—Gage Plums, 1 dish.

First Prize, 7s., to C. R. W. Adeane, Cambridge (gr. J. Hill).

Second Prize, 5s., to Prince Hatzfeldt (gr. J. Gibson).

Third Prize, 3s., to Lady Fortescue (gr. C. Herrin).

Class 46.—Damsons, Prunes, and Bullaces, 4 dishes, distinct.

First Prize, 15s., to Mrs. Wingfield, Amptill (gr. W. J. Empson).

Mr. Empson showed 'King of the Damsons,' 'Common Damson,' 'Prune,' 'Bullace.'

Class 47.—Morello Cherries, 1 dish.

First Prize, 7s., to Lady H. Somerset (gr. F. Harris).

Second Prize, 5s., to Lady Fortescue (gr. C. Herrin).

Third Prize, 3s., to Col. Horace Walpole, Winchfield (gr. A. Maxim).

Class 48.—Nuts. Collection of six varieties, may include Filberts, Cobs, and Hazel, all in Husk, and Walnuts and Chestnuts; one dish of each.

First Prize, £1. 10s., to Mr. G. Chambers, Mereworth.

Second Prize, £1, to Mr. T. Turton, Reading.

Third Prize, 10s., to J. Colman, Esq. (gr. W. King).

Class 49.—Quinces, 1 dish.

First Prize, 7s., to Mr. H. C. Prinsep, Uckfield.

Second Prize, 5s., to J. W. Fleming, Esq., Romsey, Hants (gr. W. Mitchell).

Third Prize, 3s., to Sir E. G. Loder, Horsham (gr. G. Goldsmith).

DIVISION IV.

Single Dishes of Fruit grown in the Open Air.

Open to Gardeners and Amateurs only.

DESSERT APPLES.

Class 50.—Allen's Everlasting.

Second Prize, 5s., to Hon. F. W. Buxton (gr. G. H. Godden).

Class 51.—Baumann's Red Winter Reinette.

First Prize, 7s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Messrs. de Rothschild, Acton (gr. J. Hudson).

Class 52.—Braddick's Nonpareil.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Mr. T. W. Startup, Maidstone.

Class 53.—Brownlee's Russet.

First Prize, 7*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5*s.*, to T. L. Boyd, Esq., Tonbridge (gr. T. Bennett).

Third Prize, 3*s.*, to Mr. John Nowell, Abergavenny.

Class 54.—Claygate Pearmain.

First Prize, 7*s.*, to Mr. H. C. Prinsep, Uckfield.

Second Prize, 5*s.*, to H. St. Vincent Ames, Esq. (gr. W. Bannister).

Third Prize, 3*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Class 55.—Court Pendu Plat.

First Prize, 7*s.*, to Capt. Carstairs (gr. C. Ross).

Second Prize, 5*s.*, to Mr. A. Kemp, Horsham.

Third Prize, 3*s.*, to Mr. W. Mills, Shoreham, Kent.

Class 56.—Cox's Orange.

First Prize, 7*s.*, to J. Colman, Esq. (gr. W. King).

Second Prize, 5*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3*s.*, to J. W. Fleming, Esq. (gr. W. Mitchell).

Class 57.—Fearn's Pippin.

First Prize, 7*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Second Prize, 5*s.*, to H. St. Vincent Ames, Esq. (gr. W. Bannister).

Third Prize, 3*s.*, to C. R. W. Adeane, Esq. (gr. J. Hill).

Class 58.—Kerry Pippin.

First Prize, 7*s.*, to Mr. T. W. Startup, Maidstone.

Second Prize, 5*s.*, to Mr. J. Nowell, Abergavenny.

Third Prize, 3*s.*, to T. Oliverson, Esq., Staplehurst (gr. W. Lewis).

Class 59.—King of the Pippins.

First Prize, 7*s.*, to J. K. Wingfield-Digby, Esq., Sherborne (gr. W. G. Pragnell).

Second Prize, 5*s.*, to J. Colman, Esq. (gr. W. King).

Third Prize, 3*s.*, to Col. Brymer (gr. J. Powell).

Class 60.—Mabbot's Pearmain.

First Prize, 7*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Second Prize, 5*s.*, to Mr. T. W. Startup, Maidstone.

Third Prize, 3*s.*, to Mr. H. C. Prinsep, Uckfield.

Class 61.—Mannington's Pearmain.

First Prize, 7*s.*, to Mr. J. Turton, Reading.

Second Prize, 5*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3*s.*, to Mr. H. C. Prinsep, Uckfield.

Class 62.—Margil.

First Prize, 7s., to Sir E. G. Loder, Horsham (gr. G. Goldsmith).

Second Prize, 5s., to Mr. G. H. Sage, Richmond.

Third Prize, 3s., to H. C. Moffatt, Esq., Ross (gr. T. Spencer).

Class 63.—Mother (American).

First Prize, 7s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Second Prize, 5s., to H. C. Moffatt, Esq. (gr. T. Spencer).

Third Prize, 3s., to R. Leigh, Esq. (gr. G. Woodward).

Class 64.—Ribston.

First Prize, 7s., to C. Lee Campbell, Esq., Ross (gr. C. A. Bayford).

Second Prize, 5s., to Mr. A. Kemp, Horsham.

Third Prize, 3s., to Mr. G. H. Sage, Richmond.

Class 65.—Rosemary Russet.

First Prize, 7s., to Mr. J. C. Tallack, Bury St. Edmunds.

Second Prize, 5s., to Mr. Startup, Maidstone.

Class 66.—Scarlet Nonpareil.

First Prize, 7s., to Messrs. de Rothschild (gr. J. Hudson).

Second Prize, 5s., to Mr. Turton, Reading.

Third Prize, 3s., to R. Leigh, Esq. (gr. G. Woodward).

Class 67.—Sturmer Pippin.

First Prize, 7s., to Mr. G. Chambers, Mereworth.

Second Prize, 5s., to Capt. Carstairs (gr. C. Ross).

Third Prize, 3s., to H. St. Vincent Ames, Esq. (gr. W. Bannister).

Class 68.—Williams' Favourite.

No competition.

Class 69.—Worcester Pearmain.

First Prize, 7s., to Mr. J. Culton, Dildawn, Castle Douglas.

Second Prize, 5s., to Sir E. G. Loder (gr. G. Goldsmith).

Third Prize, 3s., to Mr. H. C. Prinsep, Uckfield.

Class 70.—Wyken Pippin.

First Prize, 7s., to Hon. F. W. Buxton (gr. W. H. Godden).

Class 71.—Yellow Ingestrie.

Second Prize, 5s., to H. C. Moffatt, Esq. (gr. T. Spencer).

Third Prize, 3s., to Capt. Carstairs (gr. C. Ross).

Class 72.—Any other variety.

First Prize, 7*s.*, to H. C. Moffatt, Esq. (gr. T. Spencer).

Second Prize, 5*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3*s.*, to Mrs. Crawford, Reigate (gr. W. Slogrove).

The First won with 'Melon.'

The Second won with 'Crimson Queenings.'

The Third won with 'Washington.'

COOKING APPLES.

Class 73.—Alfriston.

First Prize, 7*s.*, to Capt. Carstairs, Newbury (gr. C. Ross).

Second Prize, 5*s.*, to R. Leigh, Esq., Maidstone (gr. G. Woodward).

Third Prize, 3*s.*, to Mr. J. Nowell, Abergavenny.

Class 74.—Beauty of Stoke.

No competition.

Class 75.—Bismarck.

First Prize, 7*s.*, to F. S. W. Cornwallis, Esq., Maidstone (gr. J. McKenzie).

Second Prize, 5*s.*, to R. Leigh, Esq., Maidstone (gr. G. Woodward).

Third Prize, 3*s.*, to Mr. F. B. Parfitt, Reading.

Class 76.—Blenheim Orange.

First Prize, 7*s.*, to H. St. Vincent Ames, Esq. (gr. W. Bannister).

Second Prize, 5*s.*, to J. Colman, Esq., Reigate (gr. W. King).

Third Prize, 3*s.*, to Hon. F. W. Buxton, Sawbridgeworth (gr. W. H. Godden).

Class 77.—Bramley's Seedling.

First Prize, 7*s.*, to Prince Hatzfeldt, Chippenham (gr. J. Gibson).

Second Prize, 5*s.*, to Capt. Carstairs, Newbury (gr. C. Ross).

Third Prize, 3*s.*, to J. Colman, Esq., Reigate (gr. W. King).

Class 78.—Cellini.

First Prize, 7*s.*, to Capt. Carstairs, Newbury (gr. C. Ross).

Second Prize, 5*s.*, to Mr. J. Nowell, Abergavenny.

Third Prize, 3*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Class 79.—Cox's Pomona.

First Prize, 7*s.*, to J. Colman, Esq., Reigate (gr. W. King).

Second Prize, 5*s.*, to

Third Prize, 3*s.*, to Lady Fortescue, Maidenhead (gr. C. Herrin).

Class 80.—Duchess of Oldenburg.

First Prize, 7s., to Mr. J. Nowell, Abergavenny.

Second Prize, 5s., to T. Oliverson, Esq., Staplehurst (gr. W. Lewis).

Class 81.—Dumelow's Seedling (*syn.* Wellington and Normanton Wonder).

First Prize, 7s., to Capt. Carstairs, Newbury (gr. C. Ross).

Second Prize, 5s., to Lady Fortescue (gr. C. Herrin).

Third Prize, 3s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Class 82.—Ecklinville Seedling.

First Prize, 7s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Second Prize, 5s., to R. Leigh, Esq., Maidstone (gr. G. Woodward).

Third Prize, 3s., to J. T. Charlesworth, Esq., Nutfield (gr. T. W. Herbert).

Class 83.—Emperor Alexander.

First Prize, 7s., to R. Leigh, Esq., Maidstone (gr. G. Woodward).

Second Prize, 5s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Third Prize, 3s., to Sir E. G. Loder, Bart. (gr. G. Goldsmith).

Class 84.—Gascoyne's Scarlet.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Mr. T. W. Startup, Maidstone.

Third Prize, 3s., to Col. H. Walpole, Winchfield (gr. A. Maxim).

Class 85.—Golden Noble.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to J. T. Charlesworth, Esq. (gr. T. W. Herbert).

Third Prize, 3s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Class 86.—Golden Spire.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Mr. J. Nowell, Abergavenny.

Third Prize, 3s., to T. Oliverson, Esq. (gr. W. Lewis).

Class 87.—Grenadier.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Mr. T. W. Startup, Maidstone.

Third Prize, 3s., to Lady Fortescue (gr. C. Herrin).

Class 88.—Hawthornden (New).

First Prize, 7s., to J. T. Charlesworth, Esq. (gr. T. W. Herbert).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Lady Fortescue, Maidenhead (gr. C. Herrin).

Class 89.—Hormead Pearmain.

First Prize, 7s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Mr. T. W. Startup, Maidstone.

Class 90.—Lane's Prince Albert.

First Prize, 7s., to Capt. Carstairs (gr. C. Ross).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Mr. G. H. Sage, Richmond, Surrey.

Class 91.—Lord Derby.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Mr. G. H. Sage, Richmond.

Third Prize, 3s., to Mr. T. W. Startup, Maidstone.

Class 92.—Lord Grosvenor.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Mr. J. H. Salmon, Rowton, Chester.

Class 93.—Lord Suffield.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Mr. T. W. Startup, Maidstone.

Third Prize, 3s., to T. Oliverson, Esq. (gr. W. Lewis).

Class 94.—Mère de Ménage.

First Prize, 7s., to Mr. T. Turton, Reading.

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Capt. Carstairs (gr. C. Ross).

Class 95.—Newton Wonder.

First Prize, £1 (presented by Messrs. J. R. Pearson & Sons, Chilwell, Notts), to Messrs. de Rothschild (gr. J. Hudson).

Second Prize, 5s., to Ph. Crowley, Esq., Croydon (gr. J. Harris).

Third Prize, 3s., to T. Oliverson, Esq. (gr. W. Lewis).

Class 96.—Peasgood's Nonsuch.

First Prize, 7s., to Horticultural College, Swanley.

Second Prize, 5s., to Mr. J. Morter, Upper Norwood.

Third Prize, 3s., to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Class 97.—Pott's Seedling.

First Prize, 7s., to Mr. J. H. Salmon, Rowton, Chester.

Second Prize, 5s., to Mr. T. W. Startup, Maidstone.

Third Prize, 3s., to R. Leigh, Esq. (gr. G. Woodward).

Class 98.—Royal Jubilee.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Capt. Carstairs (gr. C. Ross).

Third Prize, 3s., to Ph. Crowley, Esq. (gr. J. Harris).

Class 99.—Sandringham.

First Prize, 7*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5*s.*, to Mrs. Crawford (gr. W. Slogrove).

Third Prize, 3*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Class 100.—Seaton House.

Second Prize, 5*s.*, to Mr. T. Turton, Reading.

Class 101.—Spencer's Favourite (*syn.* Queen Caroline).

First Prize, 7*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Class 102.—Stirling Castle.

First Prize, 7*s.*, to H. St. Vincent Ames, Esq. (gr. W. Bannister).

Second Prize, 5*s.*, to Mr. J. H. Salmon, Rowton, Chester.

Third Prize, 3*s.*, to Capt. Carstairs (gr. C. Ross).

Class 103.—Stone's (*syn.* Loddington Seedling).

First Prize, 7*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Third Prize, 3*s.*, to Capt. Carstairs (gr. C. Ross).

Class 104.—The Queen.

First Prize, 7*s.*, to Mr. T. W. Startup, Maidstone.

Second Prize, 5*s.*, to Mr. G. Chambers, Mereworth.

Third Prize, 3*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Class 105.—Tower of Glamis.

First Prize, 7*s.*, to Capt. Carstairs (gr. C. Ross).

Second Prize, 5*s.*, to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Class 106.—Warner's King.

First Prize, 7*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Second Prize, 5*s.*, to Mr. H. C. Prinsep, Uckfield.

Third Prize, 3*s.*, to Mr. T. W. Startup, Maidstone.

Class 107.—Any other variety.

First Prize, 7*s.*, to Mr. W. Mancey, Merstham.

Second Prize, 5*s.*, to F. S. W. Cornwallis, Esq. (gr. J. McKenzie).

Third Prize, 3*s.*, to R. Leigh, Esq. (gr. G. Woodward).

The First won with 'Hollandbury.'

The Second won with 'Striped Beefing.'

The Third won with 'Waltham Abbey.'

DESSERT PEARS.

Class 108.—Bergamotte Esperen.

First Prize, 7s., to Rev. O. L. Powell, Weybridge (gr. A. Basile).

Second Prize, 5s., to J. R. Brougham, Esq., Carshalton (gr. W. Jones).

Third Prize, 3s., to Sir E. G. Loder (gr. G. Goldsmith).

Class 109.—Beurre Bosc.

First Prize, 7s., to Hon. W. Lowther, Wickham Market (gr. A. Andrews).

Second Prize, 5s., to C. R. W. Adeane, Esq. (gr. J. Hill).

Third Prize, 3s., to H. St. Vincent Ames, Esq. (gr. W. H. Bannister).

Class 110.—Beurre Diel.

First Prize, 7s., to Earl Percy, Brentford (gr. G. Wythes).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to H. St. Vincent Ames, Esq. (gr. W. H. Bannister).

Class 111.—Beurre Dumont.

No competition.

Class 112.—Beurre Hardy.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Hon. W. Lowther (gr. A. Andrews).

Third Prize, 3s., to Mr. J. Spottiswood, Brighton.

Class 113.—Beurre Superfin.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Sir E. G. Loder (gr. G. Goldsmith).

Third Prize, 3s., to Sir W. Geary (gr. W. Cotterell).

Class 114.—Bon Chrétien (Williams).

No competition.

Class 115.—Conference.

First Prize, 7s., to J. W. Melles, Esq. (gr. J. Nicholson).

Class 116.—Maréchal (or Conseiller) de Cour.

First Prize, 7s., to Rev. O. L. Powell (gr. A. Basile).

Second Prize, 5s., to H. St. Vincent Ames, Esq. (gr. W. H. Bannister).

Third Prize, 3s., to Sir E. G. Loder (gr. G. Goldsmith).

Class 117.—Doyenne du Comice.

First Prize, 7s., to Col. Archer Houblon (gr. B. Calvert).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to G. H. Field, Esq. (gr. R. Edwards).

Class 118.—Duchesse de Bordeaux.

First Prize, 7s., to Sir E. G. Loder (gr. G. Goldsmith).

Class 119.—Durondeau.

First Prize, 7s., to J. K. D. Wingfield-Digby, Esq. (gr. W. J. Pragnell).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Sir W. Geary (gr. W. Cotterell).

Class 120.—Easter Beurre.

First Prize, 7s., to Col. Brymer (gr. J. Powell).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to J. R. Brougham, Esq. (gr. W. Jones).

Class 121.—Emile d'Heyst.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Sir E. G. Loder (gr. G. Goldsmith).

Third Prize, 3s., to Rev. O. L. Powell (gr. A. Basile).

Class 122.—Fondante d'Automne.

Second Prize, 5s., to Rev. O. L. Powell (gr. A. Basile).

Third Prize, 3s., to Sir E. G. Loder (gr. G. Goldsmith).

Class 123.—Glou Morceau.

First Prize, 7s., to R. Leigh, Esq. (gr. G. Woodward).

Second Prize, 5s., to Sir W. Geary, Bart. (gr. W. Cotterell).

Third Prize, 3s., to Mr. C. W. Chard.

Class 124.—Josephine de Malines.

First Prize, 7s., to Capt. Carstairs (gr. C. Ross).

Second Prize, 5s., to R. Leigh, Esq. (gr. G. Woodward).

Third Prize, 3s., to Col. Brymer, M.P. (gr. J. Powell).

Class 125.—Louise Bonne.

First Prize, 7s., to H.H. Prince Hatzfeldt, Chippenham (gr. W. Gibson).

Second Prize, 5s., to H. H. Hurvard, Esq., Attleboro' (gr. J. Bowery).

Third Prize, 3s., to R. Worsley, Esq., Cuckfield (gr. F. Potter).

Class 126.—Marie Louise.

First Prize, 7s., to C. R. W. Adeane, Cambridge (gr. J. Hill).

Second Prize, 5s., to W. A. Cook, Calne, Wilts.

Third Prize, 3s., to Col. Brymer, Dorchester (gr. J. Powell).

Class 127.—Marguerite Marrillat.

No competition.

Class 128.—Nouvelle Fulvie.

First Prize, 7s., to H. C. Moffatt, Esq., Ross (gr. T. Spencer).

Second Prize, 5s., to Earl Percy, Brentford (gr. G. Wythes).

Third Prize, 3s., to Rev. O. L. Powell, Weybridge (gr. A. Basile).

Class 129.—Pitmaston Duchess.

First Prize, 7s., to Horticultural College, Swanley.

Second Prize, 5s., to W. Mancey, Esq., Merstham.

Third Prize, 3s., to A. O. Smith, Esq., East Grinstead (gr. C. Harris).

Class 130.—Seckle.

First Prize, 7s., to Capt. Carstairs, Newbury (gr. C. Ross).

Second Prize, 5s., to Col. Archer Houblon, Bishops Stortford.

Third Prize, 3s., to Col. Brymer (gr. J. Powell).

Class 131.—Souvenir du Congrès.

First Prize, 7s., to H. St. Vincent Ames, Esq., Westbury-on-Trym (gr. W. H. Bannister).

Class 132.—Thompson's.

First Prize, 7s., to Lady H. Somerset, Ledbury (gr. F. Harris).

Second Prize, 5s., to Col. Brymer (gr. J. Powell).

Third Prize, 3s., to H. St. Vincent Ames, Esq. (gr. W. H. Bannister).

Class 133.—Triomphe de Vienne.

No competition.

Class 134.—Winter Nelis.

First Prize, 7s., to G. H. Field, Esq., Sevenoaks (gr. R. Edwards).

Second Prize, 5s., to R. Leigh, Esq., Maidstone (gr. G. Woodward).

Third Prize, 3s., to Mr. H. C. Prinsep, Uckfield, Sussex.

Class 135.—Any other variety.

First Prize, 7s., to Mr. W. Sanders, Andover.

Second Prize, 5s., to Mr. Prinsep, Uckfield.

Third Prize, 3s., to Mr. W. Pope, Newbury.

The First and Second won with 'Duchesse d'Angoulême.'

The Third won with 'Marie Louise d'Uccle.'

DIVISION V.

(Prizes presented by Messrs. J. Veitch & Son.)

Class 136.—Best Flavoured Apple.

First Prize, 10s., to Mr. H. C. Prinsep, for Cox's Orange.

Second Prize, 5s., to Mr. T. W. Startup, for Ribston Pippin.

Class 137.—Best Flavoured Pear.

First Prize, 10s., to Sir W. Geary, Bart., for 'Thompson's.'

Second Prize, 5s., to Sir W. Geary, Bart., for 'Beurre Hardy.'

MISCELLANEOUS EXHIBITS.

Perhaps the finest exhibit of Apples in the whole Show—certainly the finest from an amateur—was that of Major W. Bythway (gr. Mr. Wilkins), of Warborough, Llanelly. It consisted of 100 dishes, and it is hardly too much to say that there was not one even second-rate dish amongst them—all were excellent, and many surprisingly so, in cleanness, evenness, size, and colour. In the face of such a collection it is hardly possible to consider South Wales a bad district for Apples.

The Gold Medal offered by the Worshipful Company of Fruiterers, which was withheld in Class 14, was, by permission of the Company, awarded to Major Bythway for this magnificent exhibit.

From the Society's own Gardens came a collection of Grapes, intended to illustrate the characteristics of the different varieties: Gros Colmar, Royal Muscadine, Canon Hall Muscat, Gros Maroc, Mrs. Pearson, Mrs. Pince, Muscat Hamburg, Golden Queen, Muscat of Alexandria, Black Hamburg, Gros Guillaume, Raisin de Calabre, Dutch Hamburg, Foster's Seedling, Black Monukka, and Alicante. There were also exhibited for the same purpose about 30 dishes of Pears of the less well-known varieties.

The Horticultural College at Swanley sent a large collection of fruit and nuts. The fruit was of good quality, but much alteration was required in the naming of the varieties.

The collection sent by Messrs. Rivers & Son, of Sawbridge-worth, Herts, was most beautifully set out, having little bush-trees in pots, in the centre, laden with fruit; and below, small clumps of different varieties of Apples, Pears, Grapes, Peaches, and Plums laid out without plates upon a carpet of fresh green moss.

Messrs. James Veitch & Sons, Chelsea, sent a magnificent

exhibit, consisting of 100 dishes of Apples, 90 of Pears, 10 of late Plums, and a few dishes of Figs, Medlars, and Cherries. But what, perhaps, most attracted the attention of the general public was the beautiful and exquisitely coloured fruiting sprays of *Physalis Francheti*, the new and enlarged 'Winter Cherry' of gardens, recently brought from Japan by a member of the firm. Gardeners, however, were at least equally attracted by a tray of 48 simply superb fruits of Cox's Orange Pippin, the like of which for culture have seldom if ever been seen.

Messrs. Veitch also contributed a large table of ornamental fruited and berried plants, for which the thanks of all lovers of such decorative autumnal subjects must have been most cordially awarded. They were not only lovely in themselves, but most instructive; and it must have come as a surprise to many, if not to most, that we have such a wealth of beautiful berry-bearing plants growing in England. The following plants were represented in the group, the English names being added when well known:—

Alnus cordifolia. The Heart-shaped Alder.

„ *pendula*.

Amelanchier floribunda. The Canadian Grape Pear.

Arbutus procera = *A. Menziesii*.

„ *Unedo*. The Strawberry Tree.

Asparagus officinalis.

Berberis vulgaris. The Barberry.

„ *Thunbergii*.

„ *aristata*.

„ *asiatica*.

Cerasus lusitanica. The Portugal Laurel.

„ *laurocerasus*. The Laurel.

Colutea arborescens. The Woody Bladder Senna.

Cornus sanguinea atrosanguinea. The Dark Blood-red Dogwood.

„ *mas*. The Cornelian Cherry.

Cotoneaster uniflora

„ *Simonsii*.

„ *bacillaris*.

„ *buxifolia*.

„ *microphylla*.

„ *horizontalis*.

„ *frigida*.

„ *affinis*.

Crataegus orientalis. The Eastern Hawthorn.

„ *Aronia* = *C. Maura*. The Mediterranean Hawthorn.

„ *glandulosa* = *C. flava*. The Yellow-berried Hawthorn.

„ *prunifolia* = *C. crus-galli*.

„ *melanocarpa*. The Black-fruited Hawthorn.

„ *oxyacantha*. The Hawthorn.

„ *Laelandi*.

„ *cordata*. The Washington Thorn.

„ *coccinea corallina*.

- Cratægus punctata splendens.*
 „ *orientalis sanguinea.*
 „ *tomentosa.*
 „ *pyracantha.* The Evergreen Thorn.
 „ *coccinea.* The Scarlet-berried Thorn.
Euonymus japonicus. The Japanese Spindle Wood.
 „ *europæus.* The Spindle Wood.
 „ „ *fructu-albo.* White-fruited Spindle Wood.
Gleditschia triacanthos. The Honey Locust.
Hedera helix arborescens chrysocarpa. The Yellow-berried Tree Ivy.
Hippophaë rhamnoides. The Sea Buckthorn.
Hypericum androsaemum. Sweet Amber.
 „ *pyramidatum.* Pyramidal St. John's Wort.
Ilex Aquifolium flavum. The Yellow-berried Holly.
 „ *Perado.*
Laurus nobilis. The Bay Tree.
Leycesteria formosa.
Magnolia purpurea.
Mespilus germanica. The Medlar.
Pernettya mucronata. The Prickly Heath.
 „ „ *speciosa.*
 „ „ *angustifolia.*
Pterocarya caucasica. The Caucasian Walnut.
Pyrus Malus var. The Fairy Crab Apple.
 „ „ *spectabilis alba.*
 „ *Toringo.* The Toringo Crab.
 „ *torminalis.* The Wild Service Tree.
 „ *coronaria.* The Sweet-scented Crab.
 „ *Malus Bertini.* Bertin's Crab.
 „ *salvifolia.*
 „ *Malus nigra.*
 „ „ *edulis.*
 „ „ var. The Dartmouth Crab.
 „ *aria.* The White Beam Tree.
 „ *floribunda = arbutifolia.*
Quercus Ilex. The Evergreen, or Holm, Oak.
Rhamnus cathartica. The Buckthorn.
 „ *frangula.* The Berry-bearing Alder.
Rosa rugosa alba.
 „ *rubiginosa.* The Eglantine or Sweet Briar.
 „ *rugosa.*
 „ *simplex.*
Sambucus racemosa. The Scarlet-berried Elder.
Skimmia japonica.
 „ *fragrans.*
Staphyllea pinnata. St. Anthony's Bladder-nut.
Styrax japonica. The Twiggy Storax.
 „ *Obassia.*
Symphoricarpus racemosus. The Snow Berry.
Trochodendron aralioides.
Viburnum Opulus. The Guelder Rose.
 „ *rugosum.* The Wrinkled Laurestinus.
Xanthoceras sorbifolia.

Messrs. J. Cheal & Sons, Crawley, showed 150 dishes of very fine Apples and Pears, and some most interesting little two-year-old trees of 'Bismarck' bearing wonderful crops of Apples.

Messrs. J. Laing & Son filled a large table with boxes and baskets of Apples and Pears, some of the latter being of great size and beauty. Grapes were also included.

Messrs. Paul & Son, Cheshunt, exhibited very fine Apples and Pears and some Royal Muscadine Grapes which had been grown out of doors.

Messrs. J. R. Pearson & Sons, of Chilwell, Notts, brought only one variety of Apple, 'Newton Wonder,' but of it they had 20 magnificent dishes and three large basketfuls. It is a very fine, large, solid, late-keeping, cooking Apple of sterling merit.

Mr. J. Watkins, of Hereford, showed a large and interesting collection of named Cider Apples, most of them being of superb colour. Although most of them were very inferior as dessert Apples, they were said to be far more valuable for cider-making than any of the choicest table fruits (*see* p. 199).

Messrs. Chas. Lee & Son, Hammersmith, sent a fine collection of 100 dishes and baskets of Apples and Pears.

Messrs. S. Spooner & Sons, Hounslow, staged their Apples and Pears in pyramids. The fruit was clean and of good quality.

Messrs. J. Peed & Son, Norwood, sent a very interesting collection of Apples and Pears of fine colour and quality.

Messrs. Gaymer & Sons, Attleborough, Norfolk, sent a large and varied collection of Cider Apples.

Messrs. Young & Dobinson, Stevenage, sent a collection of Tomatos, chiefly 'Young's Eclipse.'

Messrs. Fellowes & Ryder, Orpington, Kent, exhibited a magnificent display of upwards of 300 fruits of Tomato 'Duke of York.' The fruits were all perfectly clean and free from spot, and remarkably even in size and appearance.

Mr. W. Horne, Perry Hill, Cliffe, Rochester, showed 12 varieties of excellent Apples and Pears.

Mr. B. Wells, Crawley, sent a collection of very fine Apples.

Mr. H. Becker, Jersey, exhibited 'Royal Jersey Pearmain,' a finely coloured Apple, and several other Jersey-grown fruits.

Mr. Crump, Leamington, showed a new black Grape, 'Royal Leamington,' a variety with handsome bunches and large dark oval berries. They were not fully ripe, so that it may possibly

prove to be a useful addition to our late-keeping varieties. This remains to be seen.

Mr. H. A. Orr, of Bedford, exhibited specimens of his most handy and compact Trays for storing Apples, Pears, &c.

THE JUDGES.

The following gentlemen kindly acted as Judges, and the best thanks of the Society are due to them for their labours :—Messrs. H. Balderson, N. Barnes, A. F. Barron, W. Bates, J. Cheal, W. Crump, A. Dean, J. Douglas, T. Glen, C. Herrin, J. Hudson, W. Jarman, J. MacIndoe, H. Markham, G. Norman, A. H. Pearson, W. Pope, T. F. Rivers, J. Smith, O. Thomas, J. Watkins, J. Wright, G. Wythes.

CONFERENCE.

THURSDAY, OCTOBER 1.

The Chair was taken by Mr. George Bunyard, F.R.H.S., of Maidstone, at 3.30 p.m., who at once called on Mr. Edmund J. Baillie, F.R.H.S., F.L.S., of Chester, who read the following paper :—

THE IMPORTANCE OF BRITISH FRUIT GROWING FROM A FOOD POINT OF VIEW.

By Mr. EDMUND J. BAILLIE, F.L.S.

The subject upon which I have been asked to write a short paper is one which suggests consideration in a direction somewhat different from that in which, usually, the thoughts of the Fellows of this Society are invited. The papers read before us usually deal more or less with aspects of practical production, and deal, in the main, with facts bearing upon various features of horticulture or of botanical science, whilst the paper I am permitted to read to you to-day treats more of an economic subject, bearing more indirectly than directly upon the question of production ; though I wish to show that, if fruit production is to be what we as horticulturists would wish it to be, we cannot afford to lose sight of the circumstances connected with the economic aspect to which I have referred, nor yet of some other features to which I wish more particularly to direct your attention.

In considering all questions bearing upon "life" and its activities it is useful, and indeed necessary, to observe and preserve a proper balance; in other words, everything must proceed in relationship to its surroundings, and in a well-ordered state as in a well-ordered life, or *vice versâ*, right advancement depends upon right relationship—upon a properly maintained balance. If by any chance one section of circumstance or one set of circumstances should receive over-attention, and be forced unduly out of place, the reaction is the more extreme and the rebound the more serious. The great law of average will not be despised, and in the evolution of the world this law acts as an unperceived safety-valve on the one hand, and as an impelling force on the other. Thus we are constantly compelled to remind ourselves of a right relationship between theory and practice; between science and art; between what is roughly (but probably incorrectly) called capital and labour; and within the sciences the "ologies" must keep due place side by side with each other. So following this line of thought into the practical field of bodily need and human requirements for the daily life, we find the production of honey, the preservation of fruit, by bottled process, by crystallisation, and by evaporation, not only finding a place in the programme of the annual exhibitions of the Royal Horticultural and Royal Agricultural Societies, but practical demonstrations are given in these departments and in other departments more or less closely connected with domestic arrangements, and with household economy. And these have proved features of interest and instruction, adding emphasis, in a field so practical, to the great axiom in art principles—testifying to the unity of art over the wide area of its varied range and the complexities of its adaptation in the phrase "Art is one."

It is perfectly right to assist education in the matter of production in all its varying aspects, for though Nature is helpful and beneficent, her laws are inexorable, and the successful culturist must, with his operations, assist, and not attempt to defeat, her beneficent aims; yet, after all, it will be found necessary in turn to assist production, or rather the producer, by turning our thoughts and attention away from the direct question of practical production itself to that necessary aspect which produce demands—namely, "distribution"; for the accumulation of perishable produce necessarily compels the provision of

markets, and the attendance of purchasers, in order that money returns for expended labour may find their way to the pockets of the fruit farmer. The attendance of purchasers in turn betokens the existence of consumers, and therefore whilst we educate persons to produce fruit, we must also educate persons in the direction of fruit consuming when it *is* produced. That briefly is the field over which my paper would seem to take us this afternoon, "The Importance of British Fruit Growing from a Food Point of View."

First, then, let us briefly consider what will immediately be a very obvious fact, namely, that we are dealing with a necessary requirement of the great human family—Food. There may be different views as to what may constitute the necessities and the luxuries of life. Some people may so distort desire and indulge appetite as to believe they see wonderful force in the eccentric expression of the French philosopher who declared that, if he could have the luxuries of life, those who wanted them were welcome to the necessities. This opens up a very wide question, and one upon which a great deal has been said and written, sometimes in a spirit of banter, at other times in sober earnest. On the other hand a learned professor, endeared to all who have the honour of his acquaintance or the delight of his friendship, has declared, "Give me good bread and pure water, and I have the necessities of life; add an apple, and I have its luxuries." This was not spoken in jest, for the same individual with a noble aim lived for months on a few pence a day to show to the poverty-stricken people of the East End of London that for the maintenance of life but little was really needed. Not long ago a discussion was carried on in which some witty jokist wondered why it was that folk like these did not live on sawdust; the rejoinder was, I remember, somewhat in these words: "If your wooden-headed correspondent likes to live on sawdust himself nobody will object; but it is thought by those to whom he directs his wit that there are other elements in the vegetable kingdom more suitable as articles of diet." But the letter produced some other correspondence, pointing out upon what odd material many of the people of the world found it possible to preserve existence. All this, however, lies outside the range of our thoughts to-day.

Food mainly comes, then, from the two kingdoms which we

broadly designate the animal and the vegetable. I see here an excellent opportunity for advancing the claims and the ethical teaching of the Vegetarian and kindred Societies, whose aims are directed to the inculcation of the notion that the proper food for man is to be obtained entirely from the vegetable kingdom. But whilst I wish to be true to myself, and to my principles, by professing that I most heartily agree with this doctrine, having put its ethics into the practice of my own life for over twenty years, still I must not take up the time of a meeting of this character with the elucidation or advocacy of the principles of vegetarianism any more than it serves my immediate purpose. But, according to the title I have already quoted, we have nothing to do with the animal kingdom in our consideration and discussion of our subject, and we may therefore come at once to the region of the vegetable world, whilst we take a somewhat closer view of all that it embraces and implies.

The food stuffs from the vegetable world are far more important than appears without some consideration. The order Gramineæ, for instance, dealing with the grasses over the whole face of the globe, holds a wonderful place in the production of foods for the human race. There is a remarkably wide range in the field purely vegetable; thus we may be reminded how we take the tubers of one family of plants and the tuberous roots of others, the leaf stalks of some, such as Rhubarb, the flowering stems of others, and the seed vessels or the fruit of most; and this all constitutes an interesting subject for closer study; but to-day we are speaking of *fruit*. Now fruit, botanically speaking, I need not remind you, would include all the cereals, or the marketable produce of cereals, such as Wheat, Barley, Oats, and so on, as well as the legumes and pulses—Peas, Beans, and the like—and in this relationship, in common with a good number of persons who have studied dietetics, I hold that fruit is the highest form of food for the human family. That is to say, those portions of plants which do not come into direct contact with the soil or with manurial agents, but which are borne, carried, developed and matured in the air and sunlight, and, as a rule, have within them the vital properties of the renewal of the life of the species in some form or other. These portions of the plants and trees about us form a most valuable contribution to man's physical needs in the direction of appetite. But to-day we do not take so

wide a range as this would indicate, for I take it that the word "fruit," as generally understood by the popular mind, restricts us to pomes, drupes, berries, and nuts.

Now, in dealing with the food question, one has to consider it from various points of view. There is the range over which it extends, briefly indicated by the divisions into which we classify members of the animal kingdom as carnivorous, herbivorous, omnivorous. We know quite well that man is to be found, practically, in all these divisions; that is to say, there are races of men who are nearly allied to the carnivora; others, as I have pointed out to you, are eaters of herbs; whilst the great bulk of people over the civilised globe, if not omnivorous, are, at any rate, advocates of a mixed diet, selected from the animal and the vegetable kingdoms in varying proportions. But we must not lose sight of the fact that, as a broad principle, the savage nations are more closely addicted to carnivorous habits, and there are students—biblical and otherwise—who have held that the nearer a man approaches to a state of primitive innocence, or, indeed, innocence of any kind, the more likely is he to select his diet entirely from the vegetable kingdom. Whilst, then, it is an admitted fact—and this is important to our argument—that it is quite possible to sustain healthy, vigorous, and active life, physical and mental, upon a diet of herbs and fruits, and whilst there are thousands of people who adopt this diet as a matter of principle, there are also millions of people who are in reality, if not in name, vegetarians simply on account of the economic character which this system of diet favours. Until recent years almost the entire labouring population of Ireland and the greater part of Scotland were largely vegetarians in practice, whilst whole nations in different parts of the habitable world maintain life without having recourse to flesh diet at all. I am simply now speaking of what—I take it—is a necessary item to prove, namely, that fruit has a food value that has never been *over*-rated, but in the majority of instances is sadly *under*-rated, and in the actual practice of daily life is, broadly speaking, in this country hardly realised at all. Now, it would be quite within my province here to produce statistics to uphold the view I have just submitted; but anyone interested in this particular aspect of the question can obtain information from the Vegetarian Society or from a little pamphlet by Mr. A. W. Duncan, F.C.S., called

“Foods and their Comparative Values,” from which the following tables and statistics have been taken :—

CLASSIFICATION OF FOOD.

The letters refer to the authorities for the analyses :—*J. B.*, James Bell ; *W. B.*, A. W. Blyth ; *K.*, König, mean of 70 analyses ; *C.*, Cameron ; *H.*, Otto Hehner ; *J.*, Johnstone.

The other analyses are nearly all taken from Professor Church's useful work on “Food” (published for three shillings by Chapman & Hall), to which the inquirer is referred.

CLASS I.—NUTRIENTS.

DIVISION I.—INCOMBUSTIBLE COMPOUNDS.

	Quantity found in plant food	Quantity found in animal food
Group 1. WATER	<i>Very large.</i>	<i>Very large.</i>
Group 2. SALTS—		
Phosphate of lime	<i>Abundant.</i>	<i>Bones large, flesh small.</i>
Chloride of soda	<i>Small.</i>	<i>Abundant.</i>
Potash salts, &c. . . .	<i>Abundant.</i>	<i>Small.</i>

DIVISION II.—COMBUSTIBLE COMPOUNDS.

	Quantity found in plant food	Quantity found in animal food
Group 3. CARBON Compounds—		
I. CARBO-HYDRATES—		
Starch	<i>Very large.</i>	<i>Minute.</i>
Sugar, gum, pectose, &c. . . .	<i>Abundant.</i>	<i>In Milk.</i>
II. FAT AND OIL—	<i>Nuts, large; fruits generally small.</i>	<i>Generally large.</i>
Group 4. NITROGEN Compounds—		
I. ALBUMINOIDS or Proteids—		
Albumin, Fibrin, &c. . . .	<i>Cereals and Nuts large.</i>	<i>Very large.</i>
Casein, Legumin	<i>Pulse large.</i>	<i>Cheese and Milk, large.</i>
II. NON-ALBUMINOIDS—		
Gelatin, Ossein, &c. . . .	<i>None.</i>	<i>Bone, skin, &c.</i>

CLASS II.—FOOD ADJUNCTS.

Group 1. VOLATILE or ESSENTIAL OILS	<i>In Condiments, Spices, &c.</i>
Group 2. VEGETABLE ACIDS (citric, tartaric, &c.)	<i>In Fruits, &c.</i>
Group 3. ALKALOIDS	<i>In Tea, Coffee, Cocoa, &c.</i>
Group 4. ALCOHOL	<i>In Fermented Liquors.</i>

GRAINS.

100 Parts contain	Flesh-formers	Heat-producers		Mineral matter	Indigestible fibre	Water
		Starch, sugar, &c.	Fat			
Wheat, White English	11·0	69·0	1·2	1·7	2·6	14·5
Fine Flour, from white soft Wheat	10·5	74·3	0·8	0·7	0·7	13·0
Coarse Bran	15·0	44·0	4·0	6·0	17·0	14·0
Household Flour, <i>J. B.</i>	16·2	69·0	1·1	0·7	0·5	11·8
Oatmeal, fresh Scotch	16·1	63·0	10·1	2·1	3·7	5·0
Buckwheat, husk free	15·2	63·6	3·4	2·3	2·1	13·4
Pearl Barley	6·2	76·0	1·3	1·1	0·8	14·6
Barley Meal	11·7	71·0	1·7	0·5	0·1	15·0
Rye Flour	10·5	71·0	1·6	1·6	2·3	13·0
Maize	9·0	64·5	5·0	2·0	5·0	14·5
Rice, cleaned	7·5	76·0	0·5	0·5	0·9	14·6

PULSE.

Peas	22·4	51·3	2·5	3·0	6·5	14·3
Lentils	24·0	49·0	2·6	3·0	6·9	14·5
Haricots	23·0	52·3	2·3	2·9	5·5	14·0

NUTS.

Walnuts ††	12·5	8·9	31·6	1·7	0·8	44·5
Filberts ††	8·4	11·1	28·5	1·5	2·5	48·0
Cocoa Nut, solid kernel	5·5	8·1	35·9	1·0	2·9	46·6

ROOTS AND TUBERS.

Potatos, <i>K.</i>	1·8	20·6	0·2	1·0	0·7	75·7
Turnips, white	0·5	4·0	0·1	0·8	1·8	92·8
Carrots	0·5	5·0	0·2	1·0	4·3	89·0
Parsnips	1·2	8·7	1·5	1·0	5·6	81·0
Beetroot	0·4	13·4	0·1	3·0	0·9	82·2
Jerusalem Artichokes	2·0	14·4	0·5	1·1	2·0	80·0
Onions	1·5	4·8	0·2	0·5	2·0	91·0
Radishes, <i>C.</i>	0·5	1·0	...	1·1	2·2	95·0

LEAVES, STEMS, STALKS, AND WHOLE PLANTS.

Cabbage	1·5	5·8	0·5	1·2	2·0	89·0
Sea Kale	2·4	2·8	...	0·6	0·9	93·3
Celery	1·2	3·8	...	0·8	0·9	93·3
Mushrooms	5·0	3·8	0·7	0·5	...	90·0
Lettuce	0·7	1·0	0·2	1·0	0·5	96·0
Watercress	1·7	2·7	0·5	1·3	0·7	93·1
Irish Moss	9·4	55·4	...	14·2	2·2	18·8
Rhubarb *	0·9	2·1	...	0·5	1·1	95·1

†† Fresh kernels.

* Contains 0·3 per cent. oxalic acid.

FRUITS.

100 Parts contain	Flesh- foriaers	Heat-producers		Mineral matter	Indi- gestible fibre	Water
		Starch, sugar, &c.	Fat			
Apples	0.4	12.0	1.0†	0.4	3.2	83.0
Pears	0.3	11.6	0.1†	0.3	3.7	84.0
Gooseberries	0.4	8.9	1.5‡	0.5	2.7	86.0
Grapes	0.7	16.1	0.8||	0.4	2.0	80.0
Strawberries, <i>K.</i>	1.0	6.8	1.0†	0.8	2.3	87.7
Currants, <i>K.</i>	0.5	7.3	2.1†	0.7	4.6	84.8
Cherries † † <i>K.</i>	0.6	11.4	0.9†	0.7	6.1	80.3
Plums † † <i>K.</i>	0.8	11.0	0.9†	0.7	5.4	81.2
Peaches † †	0.5	9.8	0.7†	0.6	3.4	85.0
Bananas	4.8	19.7	0.6	0.8	0.2	73.9
Figs, Turkey	6.1	65.9	0.9	2.3	7.3	17.5
Dates † †	6.6	66.3	0.2	1.6	5.5	20.8
Tomatos	1.4	8.0	...	0.8	...	89.8
Vegetable Marrow	0.6	2.6	0.2	0.5	1.3	94.8
Cucumbers	0.2	2.7	...	0.4	0.5	96.2

MILK AND DAIRY PRODUCE.

Cows' Milk.	4.0	5.0	3.7	0.75	...	86.5
Cream	6.0	2.5	36.3	0.2	...	55.0
Skim Milk	4.3	5.5	0.4	0.8	...	89.0
Asses' Milk, <i>W. B.</i>	1.9	5.5	1.0	0.4	...	91.2
Goats' Milk, <i>W. B.</i>	3.7	4.0	4.2	0.56	...	87.5
Human Milk, <i>W. B.</i>	3.0	5.9	2.9	0.16	...	88.0
Butter	2.5	0.3	86.2	1.0	...	10.0
Condensed Milk, <i>H. * *</i> . . .	10.1	54.8	9.4	2.0	...	23.7
Cheese, double Glo'ster, <i>J.</i> . .	38.0	...	22.0	4.25	...	35.8
Cheese, American, <i>W. B.</i> . .	37.2	...	35.4	4.8	...	22.6
Hens' Eggs * †	14.0	...	11.0	1.3	...	71.7

Mr. Albert Broadbent, of Manchester, has written an interesting little book upon "Fruits, Nuts, and Vegetables," from which I have extracted the following particulars, which will give an idea of the food value of some of the most commonly used articles of diet:—

Potatos . . . 4 oz. solid food in 1 lb.	Cucumber . . . $\frac{2}{3}$ oz. solid food in 1 lb.
Carrots . . . 3 " " "	Asparagus . . . 1 " " "
Parsnips . . . 3 " " "	Cauliflower . . . $1\frac{2}{3}$ " " "
Beets . . . $2\frac{3}{4}$ " " "	Melon . . . $\frac{1}{2}$ " " "
Cabbage . . . $1\frac{1}{4}$ " " "	Onions . . . 2 " " "
Spinach . . . 1 " " "	Tomato . . . 1 " " "
Celery . . . $2\frac{1}{3}$ " " "	Green Peas . . . 3 " " "
Lettuce . . . $\frac{3}{8}$ " " "	

† Malic acid.

‡ Citric acid.

|| Tartaric acid.

† † Without stones.

* † Extractives, &c., 2.0 per cent.

* * Mean of 13 analyses, 7 brands. Milk sugar, 13.1 per cent.; cane sugar, 41.7 per cent.

NUTS.

Chestnuts . . .	14 $\frac{1}{2}$ oz. food in 1 lb.	Pea - nuts or	
Walnuts . . .	14 $\frac{1}{2}$ " " "	Monkey-nuts	13 oz. food in 1 lb.
Hazel-nuts . .	14 $\frac{1}{2}$ " " "	Coco-nuts	8 $\frac{1}{3}$ " " "
SweetAlmonds	14 $\frac{1}{2}$ " " "		

FRUITS, FRESH.

Apples . . .	. 2 oz. food in 1 lb.	Gooseberries .	1 $\frac{2}{3}$ oz. food in 1 lb.
Apricots . . .	. 2 " " "	Pears . . .	. 2 " " "
Blackberries .	1 $\frac{2}{3}$ " " "	Plums . . .	. 1 $\frac{1}{3}$ " " "
Bananas . . .	. 4 $\frac{1}{3}$ " " "	Peaches . . .	. 2 " " "
Cherries . . .	. 2 $\frac{1}{3}$ " " "	Raspberries .	. 1 " " "
Cranberries . .	. 2 $\frac{1}{3}$ " " "	Strawberries .	1 $\frac{2}{3}$ " " "
Currants . . .	. 1 $\frac{2}{3}$ " " "	Grapes . . .	. 3 " " "

FRUITS, DRIED.

Prunes . . .	. 11 $\frac{1}{3}$ oz. food in 1 lb.	Raisins . . .	. 11 oz. food in 1 lb.
Pears . . .	. 10 $\frac{1}{2}$ " " "	Figs . . .	. 9 $\frac{1}{3}$ " " "
Apples . . .	. 11 " " "	Dates . . .	. 11 " " "
Cherries . . .	. 8 " " "		

All who have been brought up in the country know how slender a part heavy meals of flesh-meat played in the life of the farmer's kitchen as applied to the broad-shouldered, big-muscled men who had to be up with daylight and get through a hard, rough day's work in harvest, or any other time, when men did not work so much to the clock as they did with an eye to the necessities of the occasion. I am speaking now of perhaps five-and-twenty years ago, when I was a great deal in the farmer's kitchen myself, and I know at those times the "fleetings" from the cheese-tub, or the milk from the churn, together with bread-stuffs, formed the chief staple of the morning and evening meals; whilst on the dinner-table the Apple-dumpling, made in dishes that would fill the boiler, formed the first feature towards which forks and spoons were directed—for knives did not enter very largely into the table cutlery—and I know this, after the farmers' men had had a fair turn at the dumpling there was not room for much more; and upon diet mainly of this character in many of the large farm-houses the hard work of the long labour day was carried out in a healthy way by good-hearted, merry, contented fellows, whose very looks were an inspiration. Thus, then, in actual practice and fact, fruits have for long years past played an important part in dietetics, and have proved their value from the point of view which those mostly concerned in physical endurance would first consider.

Another important element which must have its due place in our argument is the medicinal value of a diet in which fruits are largely employed. Of late years it has become fashionable with the medical profession to suggest the Grape cure, and other cures of like nature, the basis of cure being found in the fact that an almost exclusive diet of fruits is needful, or at least beneficial, to the patient. If time permitted, and if I might venture into the field of literature and poetry, we should be able to see how the seers of the past accepted very largely the truth of the position I have thus briefly put before you, whilst they sang the praises of the Apple especially, but of other fruits also; and it would be an easy matter to cull from authentic literary productions an anthology which would put every fruit in a place of prominence in considering the inherent virtues possessed by each, and in view of such facts it seems pitiable—I had almost said criminal—that the use of fruits should be restricted to such a narrowed area of the population.

There is the added evidence of the recognised value of fruit as a marketable commodity borne out by statistics from a different source, but readily obtainable by those who desire to have them, that we, as a nation, pay millions of pounds annually for the foreign importation of such articles as could readily be produced at home. Let me be clearly understood. I am not one of those mortals who, with pessimistic outlook and a narrowed philosophy, regard every imported article as a bogey. I realise thankfully the splendid addition to our National resources of true wealth and health by the Grapes, the Oranges, Lemons, Apples, and other choice products of nature which come to us from over the seas; but the fact still remains, that there is no necessity for us to import, say, a single barrel of Apples; and whilst I thankfully realise and joyfully admit that the question of fruit as food is too narrow to be only National, but wide enough to be gloriously International, yet I also maintain that there are no fruits for Britishers to compare with British-grown fruits; so that, even as we stand now as to the laws of demand and supply, there is room enough yet for the production of home-grown fruit in much greater abundance than is at present possible.

There is another aspect which we must not overlook, for whilst up to this point I have advocated the use of fruits purely

from a point of view suggesting benefit to the users or the consumers, the production of fruits is the healthiest, happiest occupation to which man can lend himself. The proper production of fruits necessitates also the employment of labour in a degree which is not approached by agriculture, or by those methods of culture which are engaged and expended upon the coarser products, and therefore permitting the employment of coarser methods. I need not follow this argument further, and have merely introduced it to strengthen the case from a point of view which, to my mind, is one of its most important aspects.

There is one other point which I must not altogether omit. The importance of home-grown fruit will never be rightly realised until the great masses of the population, especially in the denser centres, are better educated in questions, first, of household thrift and economy; and, secondly, in habits of domestic cleanliness and in the realisation of the importance of happy, healthy environment; and until, thirdly, they are schooled and practised in the better methods of cookery, which would imply and compel the immediate revision of their preconceived notions of the relative values of foodstuffs, and would introduce them forcibly to the importance of right dietetic principles as applied to cottage homes and to the needs of the working population generally. Whether we agree with the extreme notion that fruit is the most important item in the dietary list of the people or not, we shall all, I feel sure, agree upon *two* points: first, that even in most well-ordered households flesh foods at present form a too important and constant item of diet; and, secondly, with regard to the working classes fruit as food is practically unknown. This is no exaggeration. I have made personal inquiries. I have had statistics prepared for me over different districts, and as bearing upon different conditions of the population, and it is a lamentable fact that when home-grown fruits have been so plentiful that they have been allowed either to rot on the trees or spoil upon the orchard floor, there are cottage homes that have not laid out one penny upon fruit during the weeks in which it was so superabundant; and if you ventured down a street crowded with children, little and big, in various degrees of neglect, and with squalor and thriftlessness everywhere apparent, a basket of Apples or Plums would make you the centre of a clamouring crowd. The great advance made

in the so-called education of the people in recent years by our system of technical instruction and other advanced methods of modern political economy are doubtless commendable, but even with these improved conditions there is yet a lamentable lack of that better teaching, that higher education, in the particular direction to which I have endeavoured to draw your thoughts, and one has only to gain access to the home of an ordinary working-man, or to become sufficiently friendly to get near him at his dinner-time, to see upon what sorry stuff he has to bear the burden and heat of a labour day.

I think that the Royal Horticultural Society, a society which has done such noble work, and which, with the increased zeal and enthusiasm of the later years, is so actively promoting fruit *growing* as an important industry, will add still greener laurels to its wreath, if it will help the work of existing organisations bent upon the improvement of the economic aspect of the condition of the people by advocating methods of instruction in the arts of cookery—no, indeed, but in the Art of Life—by pointing out that whilst the Society is engaged in the fair field of nature, and in the gay gardens of the horticultural world, it estimates—and estimates rightly—that the production of all that is possible and beautiful from the realm of nature is, after all, but means to an end. If we overlook the importance, nay, the sacredness, of the end, our advocacy of means and method is of little avail. On the one hand, the claims that we as a Society advocate tend to the employment of labour in healthy occupation; on the other, the energies of labour so happily and wisely directed, and so beneficently assisted, have for the ultimate end the healthier, happier, brighter life of the peoples of the earth, and in this noble crusade we can well inscribe upon our banners “Health, contentment, and peace.”

All this opens up the way to a widely extended programme. It takes us through the open country, where the gardens and the orchards are responsive to the activity and care bestowed upon them. We advise, suggest, and direct as to what may best be done, and how to do it. We examine, compare, select, and bestow the mark of praise upon all that seems to us best; but it would be well if we found it our pleasure, or our duty, or both, to devise means and methods to help the producer to get over difficulties which meet him sternly in the face—difficulties of

carriage, say, and of market methods—which he cannot fight single-handed, and under the burden of which he cannot make fair head-way. Then the wide question of education in the direction of the encouragement of a more general use of fruits and their proper preparation ; and the side issues to which we are thus introduced—philanthropical, educational, commercial, and national—all these come in ; and I would fain hope that you will determine that these considerations are well worth your closer and more serious attention. Unless we grapple with them—unless we meet them and try to deal with them favourably and earnestly—we can never rightly realise “The Importance of British Fruit Growing from a Food Point of View.”

DISCUSSION.

Mr. W. ROUPELL, speaking as an experienced fruit-grower, said he always listened with the greatest pleasure and profit to Mr. Baillie. Alluding specially to Tomatos, he said the fact that such large quantities were being consumed was something to be thankful for. Nothing had surprised him so much as the rapid growth of the taste for that fruit. He remembered the time when Tomatos were looked upon as very little superior in flavour to the Potato-apple, but now the demand exceeded the supply. Of course, he was speaking of sound, ripe fruit, and not of the rubbish that was put upon the market. With reference to the views of vegetarians, he could not help thinking that a Norfolk dumpling was greatly improved by the addition of a little bit of beef-suet ; and he noticed that vegetarians spoke as if they eschewed everything but vegetable food, while at the same time indulging in milk, cheese, and sometimes good beef gravy. With regard to the planting of Apples, he said his experience had shown that if they had a fairly good soil and used the Paradise stock, they could get a crop the second year after planting, and might look for an average crop every year after. If one sort did not bear, another would, and it was only necessary to select those of good quality. The old varieties were many of them now out of date, and a nurseryman would be only too glad to obliterate them from the list altogether. That, however, could not be done, because gardeners are continually asked by some old-fashioned persons for a particular variety they were fond of when

boys. With Cox's Orange Pippin, the American Mother, and one or two other varieties, they could dispense with the old Ribston. A dozen varieties of Apples might be grown in an average garden, but care should be taken that the soil was not exhausted, as was too often the case, before the planting took place.

Mr. BASHAM spoke of the enormous benefits which would accrue to the coal-miners and other hard workers in Monmouthshire and South Wales if they made a freer use of the Apple. He considered growers had got beyond the stage of carping criticism, and he was certain they could outdo the foreigner in the way of cultivation. Of his own exhibits at the present Show not a single tree was planted nine years ago, and he was so satisfied with his experiments that he would continue them. Most of his exhibits were grown on the Paradise stock, which was much better than the old Crab-tree stock. A very much finer fruit was obtained, and they could depend upon it that if they were to hold their own in face of the large importation of foreign fruit, they must make up their minds to grow something superior to the foreign article. If they did that, he had confidence in the future of the British fruit-grower.

Major BYTHWAY, who had some of the finest Apples in the Show, said he had never grown under glass, and he certainly did not believe in walls. He considered that South Wales was the country for Apple-growing, on account of its moisture. America had the colour, "but," added the speaker, "I beat the Americans this time. I might say," he added, "that I live in a gale of wind; and if I can grow, anyone with the needful enthusiasm and love for the calling can do as well."

Mr. A. H. PEARSON proposed a vote of thanks to Mr. Baillie, and said that the fruit they saw that day showed that Mr. Bythway had the assistance of something other than the gale of wind which he spoke of. The vote having been carried, thanks were also accorded to Mr. Bunyard for presiding, and the Conference adjourned till the following day.

FRIDAY.

In the unavoidable absence of Sir Trevor Lawrence, President of the Society, through illness, the Chair was taken by Mr. George Bunyard, F.R.H.S., at 3.30 P.M. who, after a few words

expressive of the general regret felt at Sir Trevor's absence called upon Mr. C. W. Radcliffe Cooke, M.P., who read the following paper :—

THE CIDER AND PERRY INDUSTRY.

By MR. C. W. RADCLIFFE COOKE, M.P.

IT is no doubt in consequence of the public interest I have taken in the promotion of the cider and perry industry that I have been honoured with an invitation to read a paper on the subject before your Society. It is natural that I should be interested in this branch of agriculture, because I was born and bred, and have lived most of my life, in one of the most noted cider-producing counties of England—to wit, Herefordshire, where cider and perry are the ordinary every-day drinks of the bulk of the population, and because I have also the distinction of representing the capital city of my native county in the House of Commons.

I have long been of opinion that the cider industry is one capable of considerable development, and from which farmers might consequently derive more profit than they do now. Everywhere, in the remains of once flourishing orchards and in the clumps and single specimens of great pear-trees, there is throughout the County of Hereford, as likewise in other cider-producing districts, ocular demonstration that the industry was formerly one of great importance, and this at a time when the taste of the age as regards liquors resembled that of the present day. That is to say, our orchards were most extensive and at their best, and the demand for cider and perry greatest, when the light wines of France and Germany were preferred before heavier beverages.

Dr. Beale, a distinguished horticulturist who wrote in the second half of the seventeenth century, declared that Herefordshire orchards were “a pattern for all England.” “From the greatest person,” he says, “to the poorest cottager, all habitations are encompassed with orchards.” Evelyn, who wrote somewhat later in the same century, says: “By the noble example of Lord Scudamore and of some other public-spirited gentlemen in those parts, all Herefordshire is become in a manner but one entire

orchard." The same Dr. Beale, whom I just now cited, thus extols the cider which these orchards produced: "I must not," he says, "prescribe to other palates by asserting to what degree of perfection good cider may be raised, or to compare it with wines, but when the late King Charles I. (of blessed memory) came to Hereford in his distress, and such of the gentry of Worcestershire as were brought thither as prisoners, both king, nobility, and gentry did prefer it before the best wines those parts afforded; and to my knowledge that cider had no kind of mixture. Generally, all the gentry of Herefordshire do abhor all mixtures." The industry of cider and perry making was a profitable one throughout the eighteenth and into the early part of the nineteenth century. About 100 years ago an Irish gentleman, making a tour through the cider-producing districts, mentions that at that date good cider fetched from 10 to 15 guineas a hogshead (of 100 gallons) in the neighbourhood of Ross, and that one farmer there had sold in one year 50 hogsheads of his own making at the former figure.

Even so lately as 40 or 50 years ago cider was sold straight from the press at one shilling a gallon. Now, or until quite recently, the price of new cider has been from 2*d.* to 3*d.* per gallon—inferior no doubt to that just mentioned, but yet given away at the price. Subsequently, the industry declined for two main reasons. During the French war the price of corn and meat was very high; and farmers, turning their attention to corn-growing and cattle-raising, grubbed up their orchards, many of which, and generally the most prolific, were on plough land; and as other agricultural produce became more profitable neglected to keep up such orchards as were allowed to remain. They also became careless in the making of cider and perry when these products of the farm were of less value. Then for the second reason I allege the selfish and suicidal conduct of the cider merchants and middlemen who, after buying the liquor from the farmers at a low price, thinned it with water, making, as the saying went, five hogsheads out of three, and then doctored and fortified it in order to disguise their malpractice, and make stuff sufficiently palatable to sell in Bristol and London, which were the chief centres of the trade. The result of the spreading abroad of this thin doctored stuff for pure cider was to bring the drink into general discredit with the public, and ultimately lessen the demand for it, and injure the trade. Hence also good

genuine cider and perry were rarely if ever to be found outside the cider-producing districts, and even in them the bulk, partly through carelessness in making and want of cleanliness, and partly from the inferior quality of the fruit, was hard and acid, and palatable only to those inured to it.

But although this was the condition to which the industry was reduced until quite lately, there has always been a prospect, and a very fair prospect, of reviving it. The soil and climate are the same as existed in the seventeenth century; the orchards, though neglected and reduced, are there; and amid a host of worthless varieties of fruit many sorts of approved excellence are still to be found. Moreover, the branches of agriculture which had, so to speak, ousted the cider industry are themselves on the decline.

Besides, there is this to be said for the cider and perry industry. It is at the present moment the only agricultural industry which appears to be capable of development to an almost unlimited extent, and in which we are not as yet in any great degree endangered by foreign competition. It is therefore what I venture to term a hopeful industry; and as it once flourished in an age when light liquors were preferred to heavy, there is, in my judgment, every reason to believe that once the merits of good cider and perry become generally known, the demand, which is already increasing every day, will ultimately result in these drinks taking the place, not indeed of good, wholesome pure beer, but of the many artificial beverages by which the taste of the public is now so sadly vitiated. It should be noted, too, that, despite the decline in the industry, it is still one of much more importance than is generally supposed. The principal cider- and perry-producing counties of England are Devon, Hereford, Somerset, Worcester, and Gloucester.

The following table, taken from the latest agricultural returns, gives the area under orcharding in those counties in the years 1894 and 1895 :—

				1894. Acres.		1895. Acres.
Devon	...	...	...	26,846	...	26,955
Hereford	...	...	...	26,278	...	26,538
Somerset	...	...	...	24,376	...	24,520
Worcester	...	...	...	19,419	...	19,665
Gloucester	...	...	...	18,126	...	18,514
				115,045	...	116,192

Increase in 1895 over 1894, 1,147 acres.

Cider is also made in the five neighbouring counties of Cornwall, Dorset, Monmouth, Shropshire, and Wiltshire. Taking these counties into account, and omitting some produce made in Norfolk and Kent, and a little elsewhere, it has been calculated that the area under orcharding amounts to about 140,000 acres. If from this we make a liberal deduction of one-fifth for fruit-trees other than apples and pears exclusively used for cider- and perry-making, we shall find the net acreage of cider and perry orcharding to be 112,000 acres. The authors of that great work, the "*Herefordshire Pomona*," give as an average yield (a low average) of liquor per acre 200 gallons, and the average price 3*d.* per gallon. I consider this considerably below the true figures. Somersetshire and Devonshire orchards are, as a rule, planted much more thickly than Herefordshire orchards, and 3*d.* a gallon is too low an average price, seeing that good cider fetches from 8*d.* to 1*s.* a gallon, and the juice as it runs from the mill 2½*d.* to 3*d.* I therefore put the yield as 300 gallons per acre, and the price 5*d.* per gallon. The total produce then would be 33,600,000 gallons, and the value £700,000. Mr. Sampson, the late secretary of the National Association of Cider-makers, who is well acquainted with Somersetshire and adjoining counties, puts the yield at 55,443,200 gallons, and the value £1,000,000. These are necessarily estimates, and estimates only, but I have said enough to indicate that the industry is a considerable one, and, as I shall presently show, an increasing one.

I must now very briefly describe the liquors themselves and the process of making them. Cider is the expressed and fermented juice of the apple, and perry the expressed and fermented juice of the pear; or, in other and stricter words, they are the vinous liquors produced by fermentation of the juices of these fruits before acetous or vinegar fermentation has succeeded. It is not, however, all apples or all pears whose juice will make good cider and perry. Go into a Herefordshire fruit-yard when cider-making is proceeding, and out of the heaps of apples and pears you would see there you would scarcely find one that you could eat, and very few that you would not at once reject in disgust by reason of their harshness, tartness, acidity, or astringency. The experience of all makers in the cider districts of England and France, where the industry has existed for centuries, points to the conclusion that good cider and perry possessing the flavour,

the quality—what old writers term the smartness on the palate—and the long keeping property which commend the liquor to cider drinkers can only be made from special varieties of apples and pears, varieties for the most part too harsh and astringent for table use, and too small to be saleable for consumption. The astringency which is the chief characteristic of good cider and perry fruit is due to tannin, which next to sugar and alcohol (into which the bulk of the sugar is converted) is the most important element in the fresh juice. “It makes,” say the authors of the “Herefordshire Pomona,” “the liquor ‘fine’ more readily by causing the albumen, the pectine, and the yeast plants to be deposited, and thus acts indirectly as an antiseptic, regulates the fermentation, and prevents the after tendency to ropiness, so apt to appear in the liquor from fruits of great richness.” French writers and chemists also agree in this opinion. The process of cider- and perry-making is simple, and resembles that of wine-making. The ripe fruit is crushed or ground in a mill to a greater or less degree of fineness. The old-fashioned mills in which a huge stone roller, or runner as it is called, shaped like a grindstone, revolves by horse-power in a circular stone trough grinds the pulp exceedingly fine, and some of the best cider and perry to be found in the world is made in such mills; but the system, though suitable enough on a farm, is too slow for manufacture on a large scale; and for this purpose a mill something like a turnip cutter, in which the fruit, after being broken up by toothed rollers or scratchers, is passed through stone rollers, is to be preferred, and can be worked either by hand or by power. The crushed fruit or pomace, as it is sometimes termed, is pressed through hair or manilla cloths or layers of straw, and the juice extracted. The juice is then placed in vats to ferment, and when it has thrown up a crust and thrown down lees, and is a more or less clear liquid between the two lees, it is drawn off into casks, in which regular fermentation proceeds. The process of fermentation I need not describe to this audience. Suffice it to say that its effect is to render the liquor vinous by the conversion of the sugar of the fruit into alcohol. The fermentation is the most difficult stage in the process of cider-making. Either it is unduly delayed by cold or by a deficiency of sugar in the fruit or, what is more often the case, it is too persistent, and continues so long as ultimately to exhaust

all the sugar in the cider and render it hard ; and it may proceed a stage further, and become acetous, when, of course, the liquor is ruined as cider and becomes vinegar. Experienced cider-makers by long practice are enabled by attention to temperature, by frequent racking, by filtering, and by sulphuring the casks to regulate the fermentation and stop it at the right point ; but their knowledge is more or less empirical, and not being founded on scientific principles too often dies with them. What is wanted in the cider industry is instruction in the scientific principles which underlie the practice. All manufacturers on a large scale do as a rule work scientifically, but even they have much to learn. Great credit is due to the Bath and West of England Society, and one of the most distinguished of its members, Mr. Neville Grenville, of Butleigh, near Glastonbury, on whose estate and at the instance of the Society researches into the science of cider-making have been conducted under the supervision of the eminent chemist, Professor Lloyd. You will find an exhaustive account of the experiments at Glastonbury written by Mr. Lloyd in the fifth volume of the fourth series of the Journal of the Bath and West of England Society, which will well repay perusal, and for the science and chemistry of the subject I refer you to that paper.

I think it well, however, to say that there are now what I venture to term two systems of cider-making originating in the endeavour to overcome the difficulties of fermentation, especially the tendency to the conversion of all the natural sugar of the fruit into alcohol. By the first system, which I call the natural system, fermentation by any of the means I have mentioned is checked before all the sugar has been converted into alcohol, and the resulting liquor is bottled or sent out on draught with a sufficient portion of its natural sweetness remaining in it to render it palatable to the general public, who, as all purveyors know, do as a rule prefer the liquor with some sweetness in it. By the second system the liquor is fermented to dryness ; that is to say, all the sugar is converted into alcohol, and in order to render it acceptable it is afterwards sweetened by the addition of a substance such as saccharin, which will not set up fresh fermentation ; and if it has been pasteurised and so rendered flat and dead, it will have to be artificially aerated or carbonated by the forcing into it of carbonic acid gas ; and if, as is often the case,

it is wanting in flavour, some flavouring substance is added also. Both systems have their votaries. The second is the easier of the two, but I greatly prefer the first, and it is of cider and perry so made that I venture to extol the merits as wholesome beverages.

Now having procured our good cider and perry, why do I recommend them? Because they are natural drinks made from the juice of ripe fruits without the admixture of any foreign substance, or of any drug or flavouring, pleasant to the palate, refreshing, and of low alcoholic strength. Although old cider and perry, especially perry, may when fermented to dryness contain as much as 10 per cent. of absolute alcohol, this is quite exceptional. The ordinary cider, such as would be acceptable to the general public, rarely contains as much as 4 per cent. This was demonstrated—as I pointed out in a recent letter to the *Times*, at the Show of the Bath and West of England Society this year at St. Albans. A rule having been made that all cider which did not contain 4 per cent. of alcohol should *ipso facto* be disqualified, the result was the exclusion of all the exhibits from the most noted cider-producing counties of England, Devon, and Hereford, none of which came up to the required standard, while the strongest cider shown only contained 6.60 per cent. of alcohol. Indeed, out of a total of forty-seven exhibits tested, no fewer than thirty-one were disqualified in pursuance of the rule above mentioned. In the majority of cases the makers, aware that the general public like a somewhat sweet liquor of low alcoholic strength, had stopped fermentation before it had developed the full amount of alcohol that the drink would have yielded. I consider therefore cider such as would be readily saleable on draught or in bottle to be a temperance drink preferable to all so-called temperance beverages. First, because it is a natural and not an artificial liquor; and, secondly, because it contains much less alcohol than has over and over again been proved to exist in those beverages. The wholesomeness of cider and perry is derived to a great extent from malic acid, an acid found in other fruits also. The acid of wine is tartaric acid, which when combined with lime forms precipitates or insoluble particles, which are, I believe, the principal cause of gout, rheumatism, and kindred disorders. Malic acid, in itself a health-giving product, has no power to form such precipitates, and it is possibly for this reason that cider is now so often

recommended for gouty people. Although I am now brought to the medical aspect of the subject, it is not to be supposed that I can personally speak with authority thereon. I can only state facts such as have for generations come under the observation of residents in cider-producing districts. For instance, in Herefordshire no single case of true Asiatic cholera has ever been known, whilst all medical men practising in the county—and I believe this holds good of other cider counties as well—know that among the working classes, whose habitual drink is cider and perry, diarrhœa and such-like disorders are singularly rare. Stone also and gravel are almost unknown in the county. A medical man attending the Hereford Infirmary for many years informs me that during his experience only two cases of stone had come under his notice, one being that of a child.

In Normandy, where cider constitutes the staple drink of the lower classes, gout is said to be unknown save among the wealthy, who indulge in wine. Gravel and stone in the bladder are likewise very rare, and medical men are satisfied that the immunity from both these forms of disease should be placed to the credit of cider. Medical men, as reported to me by the patients themselves or their friends, are largely recommending cider as a remedy for and a preventive against gout and rheumatism, and lately its action on the digestive organs was the subject of a paper read before one of the Bordeaux Congresses, by two French physicians, MM. Carrion and Cautru, who say, as a result of their observations, that sparkling cider is endowed with the property of prolonging the digestive process, whilst at the same time it adds greatly to its intenseness. Cider, moreover, they add, is essentially diuretic, and it also exercises a favourable influence on nutrition. It would seem, therefore, says the *Lancet*, that this old-fashioned beverage may with advantage be recommended for use at meals to sufferers from that form of dyspepsia in which the stomach evacuates its contents too quickly, to the detriment of the thereby overworked intestines. In addition to the good qualities already mentioned, well-made cider is reputed to be an efficient corrective of the uric acid diathesis. I believe this to be a scientific way of describing a gouty tendency.

A correspondent of the *Daily Telegraph*, signing himself

"Medicus," having lately stated that the use of cider affected the teeth injuriously, and that decayed teeth and toothache prevailed in the cider districts, I made inquiries of a medical man who has long practised in Herefordshire, as the statement of "Medicus" was diametrically opposed to my own experience. The gentleman to whom I wrote replied that "Medicus" was mistaken, no injurious effect of cider on the teeth having been observed by him. My informant added that, although mineral acids, such as sulphuric and nitric, are undoubtedly destructive to the teeth, fruit acids, the chief of which is malic acid, not only had no such effect, but were, on the contrary, preservatives of the teeth by neutralising the alkaline secretions of the mouth.

I may also mention in this connection the fact, without drawing any strained inference from it, that natives of Herefordshire are noted for their longevity. A remarkable instance is mentioned by old authorities, and to this day the county retains its reputation in this respect, as in the Report of the Registrar-General it is one of the four in which the duration of life is longest.

On the point of the wholesomeness of cider and perry I have now said enough, and I proceed to consider the industrial value of the trade. The benefit to the farmer who has orchards is obvious. In years of abundance, fruit—apples and pears—is too often left to rot on the ground for want of a demand. When cider and perry become popular drinks, two courses lie open to the farmer. He can either sell the fruit to the cider merchant, or make it himself into liquor, which he can store away until the season or an opportunity arrives for disposing of it. When he has the appliances and the skill his most profitable plan will be to make it into cider and perry, the return from the sale of the drink if sound and well made being much larger than that he would receive for the fruit. A gentleman, writing to me this spring from Kent, where last year they set up a cider-making plant, says: "How many thousands of pounds should we have been in pocket if all the Kent apples literally thrown away last autumn (1895) were now stored in liquid form in the shape of wholesome cider!" But even the sale of the fruit is not such an unprofitable business, even in years of abundance, when, of course, the price is low, for the quantity makes up for the reduced value. I have here a table showing the prices given by cider

manufacturers for cider fruit from the years 1889 to 1895 inclusive, ranging from £5 a ton in a scarce year to as low as 20s. a ton when fruit was plentiful. Selected sorts kept separate fetch 10s. a ton more than the average, and for a few choice varieties, as the Foxwhelp and the Kingston Black, my informant tells me he can generally give from 5s. to 6s. per cwt. Also in comparing cider fruit with other fruit for profit, it must be borne in mind that the expenses are much less than they are with choice table or cooking fruit. The former is shaken down, and is neither handpicked nor packed in hampers. It is also most frequently now grown in grass orchards, where the under crop of grass is worth as much as, and sometimes (because being sheltered it is earlier) more than, if there were no trees.

Now as to the saleability of cider and perry. All experienced cider-makers who know what they are about will tell you that they have no difficulty in selling really good, sound liquor. When introduced into districts where it is practically unknown except by name, such as parts of the North of England, it takes well. Being a year or two since in Buxton, I made inquiries there, and was told by an innkeeper that he had lately obtained a supply of draught cider from Hereford, and that in the summer months he found quite as ready a sale for it among the working classes as for beer, and at the same price. Perry is less known than cider, though I do not doubt that much is sold under the name of cider, for some perry, such as that made from the Longland Pear, is indistinguishable from cider. It also mixes very well with cider, and personally such a mixture is one that for ordinary drinking I prefer. Perry is also an excellent winter drink, being more warming than cider. Even in districts where cider-making has but recently been introduced, as in Kent, there appears to be no difficulty in disposing of the produce. The same gentleman of Kent from whom I quoted just now says of the venture in cider-making lately made there: "In the result we have had several thousand gallons which we have disposed of locally, proving beyond question that there is no lack of demand for genuine cider in our own neighbourhood; and knowing as much as we do now, our regret is that we did not make four times the quantity. Most of it has been sold in casks, none less than ten gallons, and all at remunerative prices."

It gave me, I must say, much gratification to find in the letter from which I have just cited the following passage: "The venture originated from the interest awakened by your letters to the *Times*." In former days both Surrey and Kent were cider-producing counties, and Dr. Beale, who, as I have said, wrote in the seventeenth century, speaks of having tasted cider from both Kent and Essex. In Norfolk cider has been made for generations. In the case, however, of the Kent cider it is admitted that the table fruit from which it is mostly made would be bettered by the admixture of sharper and more astringent vintage fruit; and I should recommend the Kent cider-makers to plant a good selection of such fruit, and in the meantime to improve their cider, as they already are doing, by the purchase of vintage fruit from the West country until their own newly planted trees begin to bear. In further illustration of the increase of the industry in parts of the country where it has not hitherto formed a branch of farming or of commercial business, I may instance a gentleman in Hertfordshire who has set up a cider-making plant, and that just lately I received a letter from a landowner in Scotland asking me where he could send his bailiff this season to be instructed in the business. I have also received several communications from the colonies, some, as in New Zealand, telling me of establishments already in work there, and others, as in several of the Australian colonies, asking for information and instruction.

My own opinion is that there is room in the trade for the farmer cider-maker and the cider manufacturer. The latter will probably in the future make and supply the bulk of the cider consumed by the general public, who demand, foolishly as I think, that what they drink, be it beer or cider, shall always be uniform in quality; while the former, if he be, as he should be, instructed in the science of the business, will make the choicer brands from selected sorts of noted merit, which he will dispose of to private customers and locally among those who know and appreciate really good cider. I think the number of these will increase, and that the day may come when prime cider will on the tables of the wealthy displace the commoner and often adulterated sorts of foreign wines, and when country gentlemen, especially in the cider-producing districts, will take a pride, as they evidently did in former days, in always having some good

samples of the wine of the country wherewith to entertain their friends.

I said at the beginning of my address that one reason why I considered the cider and the perry industry to be the only branch of agriculture capable of almost unlimited development was that, unlike other products of the farm, such as corn and cattle, we had not to fear competition from abroad to any serious extent. I shall be asked to justify that opinion in the face of a considerable importation from America, our only rival worth naming. In a paper I read before the Society of Arts in 1895, and also, I think, in my evidence before the Royal Commission on Agriculture, I expressed a fear that importations of cider from America were largely on the increase. And truly, if one were to take for gospel all that the dealers in American cider report, one would conclude that the English markets were in immediate danger of being swamped by their wares. The Board of Trade returns which have been supplied to me from the Department up to date for the purposes of this paper do not support this view. The following are the figures for the last three years and for eight months of this year, ending August 31 :—

IMPORTATIONS OF CIDER AND PERRY INTO GREAT BRITAIN FROM THE
UNITED STATES AND OTHER COUNTRIES IN GALLONS.

	U.S.	Other countries.
1893	537,174	20,934
1894	409,447	21,708
1895	579,290	23,900
Eight months ending } August 31, 1896. }	246,881	8,447

From these it will be seen that in the year 1894, when I and others anticipated an importation from the United States of at least a million gallons, the actual amount fell short of half a million, and showed a decrease over 1893. Although there was a substantial rise in 1895, the imports this year exhibit, so far, a great falling off, due in some measure perhaps to the partial failure of the apple crop in the States last year and the abundant crop in these islands. I hope, however, that the real reason why the importation of American cider has not increased to the extent with which we were threatened is to be found in the inferior quality of the article compared with that which we produce at home. I have already mentioned the demand for

draught cider among the working classes at Buxton. It was there also that a wine merchant told me that, running short in the hot summer of 1893 of English cider, he bought American, but discovered, to his loss, that his customers would not touch it after English, and so found himself at the end of the season burdened with forty dozen of unsaleable liquor. The fact is, as an American writer of a handbook on cider-making says, "very few indeed are the American orchards which have been planted with reference to cider-making." Consequently, American cider is, for the most part, made of the inferior grades of table fruit not good enough to market. In an article on cider-making in the *American Agriculturist* for the 8th of last August, the writer says of American cider, "It is commonly made of refuse apples of all varieties, little attention being paid to their condition when taken to the mill, as to degree of ripeness, freedom of insects, or the proportion of tart to sweet apples. The result is a juice which quickly begins to ferment, then acidify, being often unpalatable and insipid." I believe also that much of the American cider imported into this country is pasteurised, and so has to be artificially aerated after its arrival. If not pasteurised, a chemical preservative, such as salicylic or boracic acid, has to be added to it in order to enable it to bear the voyage. Some American cider analysed in the laboratory of the Agricultural College, Cirencester, was found to be impregnated with salicylic acid. I am not sufficiently versed in chemistry or medicine to say what may be the effect on the human system of continued doses of these drugs, which form the basis of most of the secret nostrums sold to cider-makers for the doctoring of the liquor; but as the object of using them is to make inferior drink or drink already on the turn pass for good, I think their use should either be prohibited, as is already the case in some countries, or that a statement of the kind and quality of the agent employed should appear on a label attached to the article sold.

My belief, therefore, is that with our abundance of orchards full of vintage fruit, much of it consisting of varieties of approved excellence, we ought, if we pay attention to the quality of our produce, not only to hold our own against our American rivals, but oust them from those markets in which they may have already obtained a footing.

I now turn to another branch of the subject—namely, to the

steps that should be taken in order to secure a regular supply of good English cider and perry equal to the demand for those drinks which is increasing day by day, and promises to assume gigantic proportions. First and foremost we must renovate our orchards, destroy the old and worthless trees, and replace them with better sorts and plant new orchards of the most approved vintage fruits, which experience has shown to be suited to a given locality. Because our orchards have been suffered to fall into decay, and to restore them would be a work from which no return could be expected for some years, ought we to take no steps to improve them? Surely not! Forty years ago French orchards were much neglected. The attention of the Government was drawn to their condition, and State assistance was given towards their renovation. Similar neglect was about the same time observable in American orchards, and a writer, James Thacker by name, urged the necessity of restoring them. His advice was followed, with the result that a noted agriculturist, writing in 1871, was able to say, "American farmers are now beginning to recognise the fact that no farm is complete without a well-selected and well-cultivated orchard." Many English landlords are replenishing their estates with fruit trees. One nobleman tells me that he plants 200 young trees annually, and intends to continue the practice; whilst another, who has been a great planter all his life, expresses himself as much disheartened by the little care the tenants take of the trees after he has planted their orchards for them.

Another step necessary is the eradication of insect pests by greasing the trees in the autumn and spraying them in the spring. Many occupiers do pursue these methods now, but without concerted action of all residents in a locality the labour of a single individual is lost; for, take what steps he may to clear his orchards, they are always open to infection from the trees of more negligent neighbours. The failure of the apple crop this season is due, I believe, as much to the ravages of insects as to the late frosts which undoubtedly blighted the hopes raised by a magnificent show of bloom. In Tasmania an Act of the Legislature has been passed compelling owners and occupiers under penalties to clear their orchards of destructive insects and keep their trees in a healthy condition. This Act will be found summarised in the Board of Agriculture's Journal for 1894. It

has already, I am told, worked wonders, and, much as our people dislike State interference in their concerns, I think it would be advisable in the interest of a great and growing industry to ask Parliament to confer on local authorities powers to deal with the subject something on the lines of the colonial measure.

Next to the renovation, restoration, improvement, replanting, and preservation of our orchards of vintage fruit will come instruction in the science of cider-making, in the scientific principles underlying the practice, and the reasons why attention, care, and cleanliness are so essential to the success of the process. Here, I think, we ought not to depend on the enterprise and public spirit of private individuals. Not only are such persons not numerous enough—you may find one in a century or so—but the matter is of sufficient importance to be dealt with by the State. In giving my evidence before the Royal Commission on Agriculture I suggested the establishment at the cost of the State of at least two experimental fruit farms, with appropriate buildings, plant, and staff, for the carrying on in them also such research into the science of cider-making as has been conducted for some time past on the estate of Mr. Neville Grenville. I would have one such experimental farm in Herefordshire, from which the adjoining counties of Gloucester and Worcester would benefit, and another on the borders of Devon and Somerset for the cider-making district dominated by those two counties.

When, however, we have done what lies in our power or in the power of the State to secure a supply of good cider and perry, there will yet remain obstacles in the way of the distribution thereof to the consumer. Foremost among these is the cost of carriage. I have been furnished with an exhaustive table of the rates charged by certain railway companies for the conveyance of cider in cask. Without troubling you with these in detail, I may say that, broadly speaking, these rates increase the cost to the consumer by from 4*d.* to 5*d.* a gallon; an enormous percentage when we remember that few care to pay for the best draught cider more than 1*s.* or 1*s.* 2*d.* a gallon. In the recent revision and lowering of rates made by some of the railway companies, ostensibly for the advantage of agriculturists, no alteration has, I am told, been made in the rates for the conveyance of cider and perry. The matter is, however, under consideration by the railway companies, who will I hope see

that it will be to their interest, as well as to the benefit of an important industry, to make a substantial concession. I suggested to the Royal Commission on Agriculture that the most effective way of dealing with the subject without constant and expensive litigation would be for the State to acquire the canals, improve them, and work them under State control, and so, by competition, effect a reduction in the rates of carriage by other routes and I still think the scheme, though an ambitious one, quite feasible.

Then the Adulteration Acts require to be more rigidly enforced than they now are, and possibly also would need amendment and strengthening. Those who sell American cider, or who are agents for the sale of it, should be compelled to state these facts on their bill-heads, cards, and advertisements. All admixture of foreign substances with cider and perry should be forbidden; or, if that be considered too drastic a provision, it should be incumbent on all sellers of cider or perry to which foreign substances, whether preservatives or not, have been added, to state on the labels attached to the casks or bottles what those substances are, and in what proportion they have been used. I doubt if any Acts for the prevention of adulteration will ever be effectively enforced if prosecutions are left to be instituted by private individuals or by the police. Such a duty should be undertaken by an association founded for the protection of the trade against the sale of foreign cider for English, and against the sale of an adulterated for a pure article. The National Association of Cider-makers, which I had the honour of founding, would, I hoped, have been sufficiently supported to be enabled to undertake this duty—a duty necessarily entailing a considerable amount of expense. The financial position of the Association is not, however, I am sorry to say, strong enough for the purpose, though I hope, as the industry develops, the persons engaged in it will be convinced that they can never effectually cope with practices which bring discredit on the trade and hinder its development, except through the medium of some organisation of the kind.

There are many other suggestions, both for fostering the demand for cider and perry, and for affording increased facilities for their distribution in the localities where they are now unknown, which have been brought to my notice by various correspondents.

To deal with all of them, however, in the compass of a single lecture would be impracticable. That task, therefore, must be left for another occasion. Meanwhile, I have endeavoured in this address to deal necessarily in a somewhat cursory manner with the more important matters relating to the development of the industry, and if any gentleman wishes to put questions to me on points arising out of the paper I have now had the honour of reading, I will do my best to answer them.

DISCUSSION.

The CHAIRMAN asked how soon young cider-apple trees came into bearing.

Mr. JOHN WATKINS said that very few sorts of cider-apples were early bearers, but if a good fruit was wanted it was worth waiting for. They must all be thankful to Mr. Radcliffe Cooke for his comprehensive paper. He himself was a cider-maker, and he found no difficulty in selling his best cider—the demand, practically speaking, was unlimited. Of course, in a large business there was always a certain amount of liquor which had to be sold at a cheaper rate than the best, but it was not that class of cider which he wished to develop. If the public required a good article they should be prepared to pay for it. Much cider was sold that was quite innocent of apple-juice at all.

Mr. GAYMER expressed the pleasure he had experienced in listening to the paper. He spoke of some American cider having been analysed. He would not, he said, state what the result of the analysis was, but if the public would only have some analysed—and the cost was next to nothing—they would be surprised at the result.

Mr. TILL asked if an apple could be recommended that would do for cider as well as for culinary purposes.

Mr. WATKINS said there were several varieties, and promised to supply a list to the Secretary of the Royal Horticultural Society. (See p. 199.)

Mr. A. DEAN suggested that no licence for alcoholic liquors should be issued in this country unless the person seeking the licence would undertake to sell cider. That would put the brewers on their mettle, especially as they were doing all in their power to “tie” as many houses as possible.

Mr. RADCLIFFE COOKE said the question of "tied" houses was one he had considered. He had been informed that certain brewers were going to take up the trade and sell cider as well as beer.

Mr. DEAN : Not their own manufacture ?

Mr. RADCLIFFE COOKE replied that he hoped not. He added that the middleman derived too great a benefit from the cider trade at the expense of the farmer. At a certain hotel in London he had to pay 2s. a quart for cider, *i.e.*, 8s. a gallon ! He wrote to the directors, who said that a mistake had been made—it had been going on for some years—and the price was reduced to one-half. In Ross, where they ought to know better, he had been charged 1s. 6d. a quart ; and in another town he had to pay for American cider at the rate of 5s. 8d. a gallon, although it was sold to dealers in this country at from 8d. to 10d. a gallon, and in large quantities at still lower prices.

The CHAIRMAN, in proposing a vote of thanks to Mr. Radcliffe Cooke, said they were all indebted to that gentleman for the energetic action he was taking to raise the industry. He was glad to see that Mr. Radcliffe Cooke was going in for a really good article, for, as had been said, there were some sorts of cider that should only be approached with prayer and meditation. He hoped a taste would be revived for a good, wholesome liquor from which both the health and the pocket of the community would mutually benefit.

The vote was carried enthusiastically, and the Conference adjourned.

	Specific gravity of fresh juice	Sugar per 1000	Tannin, mmeilage, salts, &c., per 1000	Water per 1000	Remarks
PERRY PEARS.					
Barland	1.042	106.7	27.63	865.67	These are six of the best varieties for perry, but useless for other purposes.
Moorecroft	1.049	119.61	23.84	857.0	
Oldfield	1.057	130.6	37.1	832.3	
Red Pear	1.039	87.42	22.02	880.56	
Taynton Squash	1.055	134.71	30.33	834.96	
Thurston Red	1.035	92.0	28.4	879.6	[for stewing, Makes perry of the character of cider. One of the best
Longland	1.036	84.0	41.87	874.13	
CIDER APPLES.					
Argile grise *	1.075	—	—	—	{ True Normandy varieties. Analysis given is French. Crop and fruit well in Herefordshire.
Bédan-des-partes *	1.084	—	—	—	
Brantot *	1.092	—	—	—	
Cherry Hereford or Norman	1.043	128.3	20.73	850.97	A bitter-sweet. A first-class cider apple. Makes good-flavoured cider. Cooks well and fair for eating. Cooks well & makes cider not very sweet, but which improves Very handsome. Makes fine-flavoured cider. [with age. A bitter-sweet. Makes rich sweet cider. True Normandy variety. A good old variety. [with age. A famous old variety; shy bearer. The cider improves True Normandy variety. A very old variety.
Cherry Pearmain	1.047	127.0	20.0	853.0	
Cocagee	1.052	90.8	18.2	851.0	
Cowarne, Red	1.047	119.0	14.0	867.0	
Cummy, Hereford or Norman	1.033	140.0	0.6	859.4	
De Boutteville *	1.083	193.0	27.0	780.0	A bitter-sweet. Makes a very rich cider. Of high colour. Makes a very strong cider. One of the best cider apples, making good-flavoured cider. A true Normandy variety.
Eggleton Styre	1.049	105.91	65.69	828.0	
Foxwhelp, True	1.068	144.0	85.0	771.0	
Fréquin Audière *	1.079	—	—	—	
Garter	1.063	125.4	22.6	852.0	
Handsome, Hereford or Norman	1.051	119.0	40.38	840.57	A bitter-sweet. Makes rich cider. Makes fine-flavoured cider. Cooks well. A bitter-sweet. One of the best for cider. A bitter-sweet. Makes a rich, sweet, high-coloured cider. A new variety, awarded first prizes at Gloucester and Hereford as a cider apple. Cooks well. Very attractive-looking.
Joebv Crab	1.05	103.0	44.11	852.89	
Kingston Black	1.052	100.28	67.92	831.8	
Médaille d'Or *	1.102	—	—	—	
Rouge Bruyère *	1.075	—	—	—	
Royal Wilding	1.035	107.12	46.88	846.0	A bitter-sweet. Makes rich cider. Makes fine-flavoured cider. Cooks well. A bitter-sweet. One of the best for cider. A bitter-sweet. Makes a rich, sweet, high-coloured cider. A new variety, awarded first prizes at Gloucester and Hereford as a cider apple. Cooks well. Very attractive-looking.
Skyrne's Kernel	1.034	163.38	36.62	857.0	
Strawberry Hereford or Norman	1.043	137.36	10.71	851.93	
White Bache or Norman	1.04	107.7	36.33	855.97	
Wisteston Seedling	1.05	130.0	32.0	848.0	

The following hardy varieties generally cultivated are known to make good cider:—Tom Putt, Herefordshire Beeding, King of the Pippins, Worcester Pearmain, Orange Goff, and Duchess Favourite; but they are best mixed with some of the bitter-sweets to provide tannin.

* True Normandy varieties introduced into Herefordshire about the year 1894 by the Woolhope Club. The analysis given is the French one, and the high density may be due to climate or to being tested after exposure to air. They all crop and grow well in Herefordshire. Reine des Pommes is another good one.

On Saturday, October 3, the Chair was taken by PHILIP CROWLEY, F.L.S., F.Z.S., at 3.30 P.M., who called upon Mr. J. WATKINS, of Hereford.

GATHERING, STORING, AND PROFITABLE UTILISATION OF APPLES AND PEARS.

By Mr. JOHN WATKINS, F.R.H.S.

[Read October 3, 1896.]

EVERYONE looking round the grand collection of fruit exhibited during the last three days at the Crystal Palace, under the auspices of the Royal Horticultural Society, must be struck by the fact that our growers know how to, and can, grow as good fruit as any other growers in the world, and it may well be asked why we let the foreigner capture our markets. We can grow the fruit, but this is only one part of the business of fruit-growing for profit; even of more importance is the subject I have to deal with, namely, gathering, storing, and profitable utilisation of this fruit. In dealing with a subject of so much importance as this, I do so with some diffidence, as I have to follow in the steps of so many experienced growers, and naturally shall have to repeat many old and well-known methods and practices. In some few things some of my experienced gardening friends may not agree with me, but I ask them to remember that I am treating my subject from the point of view of how to make the most money of apples and pears after they are grown, and not altogether from a gardener's point of view, who has to consider what is most suitable for private use, and has not got to keep profit so much in view. You have all of you heard and read much of late years on the importance of growing more fruit and better fruit, and so many and various have been your advisers, and the advice they have given you, that the inexperienced have doubtless found some little trouble to sift the grain from the chaff, some of them even having to give up in despair. I have known many excellent growers fail to make both ends meet from ignorance how best to harvest and to turn their apples and pears into money. A grower can easily throw away all his previous trouble and expense by the way he performs this last essential part of fruit-growing for profit.

The Time of Gathering Apples.

This to a great extent depends upon the variety, and also the season and the state of the market, but, as a rule, most large, early, soft-fleshed apples, such as Ecklinville Seedling, Lord Suffield, and others of the same class, should be gathered early, before they are fully ripe; they then travel much better. Early dessert apples, on the other hand, are generally best left on the trees until fully ripe. They then develop their best flavour and colour. Both should be marketed as quickly as possible after being gathered. It is wonderful how quickly the early apples lose their freshness, and, therefore, their marketable value, after being gathered. If your trees are cropped very heavily, it is a good plan to thin them very considerably (even to half the crop) before they are nearly fully grown, and market those picked. It is more than probable the remaining crop will develop so much better, that you will make more of it with less strain for the future welfare of the trees than if you had left the whole crop to ripen.

The best time to gather mid-season apples depends much on the season and the state of the markets. To make fruit-growing a commercial success, you not only require to study crops and markets at home, but also the best reports you can get of crops and prospects abroad. If apples are selling well, and there is a prospect of heavy importations from abroad, they should be gathered early and marketed with the early sorts; but if, on the other hand, English crops are heavy, and there are prospects of light importations later on, let your mid-season apples stop on the trees to fully colour and mature, and they will then keep longer for later markets, and be more attractive when sold if carefully packed. Last year the general quality of the American and Canadian fruit was not good; consequently when the glut of our fruit was over, the English grower, who kept his fruit well, was rewarded by a large advance in price.

This year, however, there is a prospect of heavy importations of good fruit from these countries, and I should advise growers to market early and keep only their best late keeping sorts. It was stated last month in an American trade paper that Canada alone will have 1,500,000 barrels available for export, and that the United Kingdom is looked upon by exporters as their best

market. Late apples should always be left as long on the trees as possible and carefully stored; especially does this apply to a season of heavy crops. Year after year have I known apples sold in the autumn with the early or mid-season varieties which, if kept a month or two longer, would have made fifty or even a hundred per cent. more money; they also help to glut many an already over-flowing market, and lower prices of fruit which must be sold. Besides these reasons, late apples will not keep fresh and plump if gathered before they are ripe, and must be marketed with the early fruit, whatever the price. In hot, dry seasons much fruit ripens prematurely, and often in such a season there are a great many maggoty fruits, which fall and cause inexperienced growers to think the crop wants gathering, but it is better to pick up and market the windfall apples frequently, and leave the rest to fully mature. It is often wonderful how late apples will colour up and improve in appearance the last few days when nearly ripe. The general opinion is that apples should be perfectly dry when picked, but, from my own experience of about twenty-five years in marketing and storing large quantities, I have never found any harm done to the apples for market purposes if picked when a little damp, so that they are not very wet and stored so thickly as to heat; indeed, in many cases I believe they have kept fresher and plumper, though, perhaps, at the expense of their best flavour if used for dessert; probably I shall not have all gardeners agree with me on this point, but I speak from my own experience as a grower for market.

Pears in gathering do not require quite the same treatment as apples. Early pears should always be gathered for market before fully ripe, and marketed rather under than over ripe. Late pears should, like late apples, be left to fully mature on the trees, or they do not ripen or keep well.

Mode of Gathering Apples and Pears.

You cannot do this too carefully; much loss is incurred by carelessness in gathering. All fruit should be carefully placed in the basket (which is preferably lined or padded, and if with a swing-handle all the better); fruit should never be dropped into the basket, but placed by the hand; every time a fruit drops on another it not only bruises itself, but bruises the one it falls on.

If very choice pears or specimen apples are being gathered they should be gathered into very shallow baskets, better if in single layers and taken singly out of the baskets. With large crops of commoner fruit when emptying the fruit out of the basket it should be let roll out gently and steadied by the hand; in fact it should always be kept in mind that fruit is easily bruised, and cannot be too carefully handled. I have often in country districts seen pickers (gathering fruit from standard trees) use a bag slung round their bodies as a receptacle. Nothing can be worse, as every movement of the picker rolls the fruits against one another, and bruises them more or less according to the tenderness of the variety. For dwarf trees of course no ladder is required, but for standard trees the ladder should be long and light, so that it can be easily reared by one man. For tall bushes, pyramids, or young standard trees the best contrivance I have seen is made by three very light ladders fastened together at the top by hinges to a piece of iron made in the form of a triangle. This will stand alone without support, does not break or bruise the trees, and can be easily shifted round them. A full description, illustration, and mode of making it was given by a correspondent in the *Journal of Horticulture* of a recent date.

Storing.

As I said before, to make the most money of your fruit you will sometimes want to store it, probably for some months, and upon the construction of your store or fruit room, to a great extent, depends the condition and therefore the market value of your fruit. You may take it as a general rule that apples have the greatest market value if plump and fresh looking, without a trace of shrivelling at the time of marketing; but a large proportion of the apples marketed after Christmas are not in this condition; hence the more care should be taken that you know how to properly store if needful.

For high-class or specimen fruit a properly constructed fruit-room with shelves is necessary: this need not be an expensive structure, but it should be made so that a low and uniform temperature can be maintained. It should be made so that it can be kept quite free from draughts, but capable of being ventilated when necessary. I find as a rule apples require to have good ventilation for the first three weeks or a month after

being gathered; but after this time the more securely they are kept from the air and draughts the better they will keep. Apples too are best kept from the light, and darkness does not interfere with their colouring after being stored. The fruit-room should be constructed so that it can be kept perfectly frost-proof. Apples keep best just above but never below freezing point. A store to answer these requirements can be made in several ways, one of which is by making your room with double walls, double windows, and doors. The frost will not pass between two such walls, even if thin, as the air between effectually stops it; but great care must be taken in constructing such a room that the inner wall does not touch the outer at any point, or the frost will enter at that point. This construction is for a store-room above ground. Or the fruit-room can be constructed half under ground, the chief drawback to this being a little more difficulty in ventilation. It is also better if the room has a rather damp atmosphere, so that it is not actually wet. A good model of a high-class fruit-room is the well-known one in the nurseries of Messrs. Geo. Bunyard & Co. This is built above ground, is of wood, and is thickly thatched, has double doors, windows with shutters, ventilation being in the apex of the roof, and it is fitted with shelves: the cost, it is stated, was about £30. A full description how to make a similar store was published by Mr. Bunyard in the Royal Horticultural Society's *Journal*, vol. xviii. page 147, and the splendid collection of fruit shown by his firm at the Temple Show in May last, to which a silver cup was awarded, had been kept in this room. My own fruit-room was originally built for a silo, has concrete walls, is half underground in the side of a bank, it has a packing-room above, entered from the fruit-room by a trap-door, the two being parted by a double ceiling to the fruit-room: this latter room is entered by double doors. I can keep fruit in this room if required fresh and plump until June, July, or later, and I had over forty varieties in it in good condition last June, hot as that month was. I have often had specimen fruit from two seasons in the room at the same time, and can always find fruit to make a fair display at the Royal Agricultural Society's Show held in June.

The only drawback I find is a little difficulty in getting sufficient early ventilation, but after the fruit has reached a certain stage no trouble is experienced. If large quantities of

fruit have to be dealt with, apples will keep well if laid on the floor about 12 or even 18 inches deep, and covered up from the light (I had over fifty tons in January last stored in this way), or they can be packed in barrels which are best laid on their sides after being filled; but whatever form of store you have keep it at a low temperature and as close and free from draughts as possible, giving ventilation only early in the season when the fruit is first stored. Be sure that the store is frost-proof; but if by any means the frost does enter do not disturb the frozen fruit until it has thoroughly thawed; let it thaw untouched and in the dark, and your loss may not be so much as you would expect. I have known apples in a plentiful year kept well in the open air in heaps, covered up with straw and earth, much the same as potatoes, and come out fresh and plump in the spring (I do not say the flavour would be first-class). These latter modes are, of course, for dealing with large quantities of ordinary fruit. A very ingenious and useful system of storing fruit has been patented and introduced by Mr. Orr, of Bedford. This consists of a series of trays into which the fruit can be placed direct from the tree; and these being formed so that they can be placed one upon another, a large quantity can be placed in a small space. With a few slight improvements, and if the question of cost can be satisfactorily got over, I have no doubt it will be largely adopted.

In storing take care that none but carefully hand-picked and sound fruit is stored, or great loss will most likely be incurred. The less an apple is handled after being picked the better will it keep, and I find no necessity for following the old-fashioned method of frequently wiping the fruit to remove the moisture.

Pears do not require quite the same treatment as apples in storing. To bring out their best flavour they require a rather higher and dryer atmosphere.

I now come to the most important step of all in connection with commercial fruit-growing, that is the marketing and profitable utilisation of your fruit; here you have to study the different markets. In certain markets certain classes and sorts of fruit sell best; in one market high-class dessert fruit sells best, in another large cooking apples, in another quality is not so much consideration as high colour. It is no use sending common fruit to Covent Garden Market, but there are markets which will take

them. Large coarse sorts of apples, such as "Catsheads," will not sell in the London markets, but they will sell well in Wales or the North. Some sorts, again, are favourites in particular markets; that grand dessert apple "Cox's Orange Pippin" will make a high price in London; but send it to Manchester, where it is not so well known, and it will not sell nearly as well.

"Wyken Pippin," a high-flavoured but not very attractive-looking dessert apple, will sell well in Birmingham (where its good qualities are well known); but buyers will hardly look at it in most other markets; and so I could go on and give other instances.

Grading.

This most important part of your work—"marketing and utilisation of your fruit for profit"—I can almost say, all pivots round the one word "grading." I have been harping on this string for the last fifteen years or more, and have heard many others urge the importance of grading. Depend upon it, the future of the fruit trade of the United Kingdom lies in the direction of grading. We can, I believe, grow as good fruit as other countries; then how and why do they beat us? Not by growing better fruit than we do, but by only sending us the best, in quantity, and of sorts and qualities which they know suit our markets, utilising the other classes of fruit for other purposes or other markets. Far be it for me to advise anyone to grow inferior fruits for profit; but no grower, however proficient, can grow all best, and it is as important to profitably utilise the second rate as the best, if you wish the balance sheet to be on the right side. There is a market for the best, there is another market for the seconds, and there is a market on purpose for the thirds; but if you send your fruit, best, seconds, and thirds, without grading to the market for the best, you will only realise a third-rate price for the lot; whereas if you had properly graded this fruit, your best would make the best price in the market for the high-class, your seconds would make their value in the proper market, and your thirds could be utilised for some other purpose.

Apples should always be graded into three classes—best, seconds, and thirds—and in some cases a fourth class can be added, namely, extra selected choice or specimen fruits. The extra selected should make a high price, for high-class cus-

tomers, special occasions, or decorative purposes. I may mention that two weeks following during this September I saw sold by public auction in Hereford Fruit Market (where upwards of 400 lots of fruit were sold each time, good, bad, and indifferent) boxes of selected specimen apples (Peasgood Nonsuch), containing only one dozen fruits, at 4s. 6d. and 5s. per box, and that to dealers, whereas there was plenty of common fruit sold at the same sum per hundredweight.

The best fruit can be sent to high-class markets packed in suitable packages: the seconds should go to other markets where there is a demand for this class of fruit amongst buyers who do not care to buy the high-priced, but want more for their money. There are many such markets in our great manufacturing centres; or they can be used for drying, cider making, jam making, &c. There is one purpose for which your seconds may be utilised, viz., drying. Although I have a good pattern of evaporator, and know others who have used the same kind with success, I cannot speak from practical experience on any large scale; but I believe only certain sorts of apples are suitable, and that to work one profitably it requires doing on a moderately large scale. There are several purposes for which the thirds can be profitably utilised. Thousands of tons are used annually by jam makers for making a cheap mixed jam, which can be sold at low prices in our great manufacturing districts; and as long as it is sold for what it is, no fault can be found, as in no other way can so cheap and wholesome a jam be made. I myself have sold a hundred tons at one time to one firm for this purpose. The jam makers will only take good boiling apples—the sharper and more acid the better. There is another purpose for which small apples can be used, viz., cider making; but a few words of warning here: sharp, sour cooking apples will not make good cider. Soil makes a great difference to the quality of cider. On a shallow or gravelly soil good cider cannot be made even from good cider sorts of apples. I think some of my Kent friends found out these facts when attempting to utilise their glut of fruit last year. Most rich, high-flavoured, and sweet apples make good cider; but the best of our dessert apples are worth too much money in the markets even to make cider with, and it would be folly to use them when as good or better cider can be made from less costly fruit. I often feel amused

when I read the circulars of some cider makers who state they have cider made from Ribston Pippins, Newtown Pippins, and other high-class dessert apples. There are plenty of good cider varieties with the requisite tannin, grown in our cider-making districts, without having recourse to better sorts; but this is no reason why the suitable small fruit, not good enough for market, cannot be profitably used. I am not about to give you a treatise on cider making, but I may just mention that large fine fruit from young trees does not make as good cider as smaller fruit from old trees, and the juice is usually of lower specific gravity, the reason doubtless being that there is more water in the juice of the larger fruit, caused by the greater activity of the roots of the younger trees. If you cannot utilise your thirds for any of these purposes do not hesitate to throw it away rather than mix it with the better class; that is, if you have no pigs or other stock you can give it to. It will pay you better to do this.

I may here mention that I sold last season (1895 and 1896) upwards of 150 tons of dessert and cooking apples and pears, and made into cider a good many hundreds of tons of cider apples and perry pears, mostly of the best cider and perry sorts; and all this fruit was graded for different purposes. For the last few years I have consigned all my best fruit under my own particular brand, and it was only a month ago I wrote to the fruit salesman who sells most of my best in Covent Garden Market, asking him if he thought that it paid me to grade my apples. His reply was as follows: "I am sure it has paid you to grade the apples; your Pomona brand has only to be shown and the best buyers are all after it. They know well enough the packing after I have received one or two lots."

Packing.

Pears should be graded the same as apples, but few of the dessert pears make good perry. Some of our hardy perry sorts, however, are amongst the best for stewing; one of our oldest perry pears, the Longland, equals the well-known Catillac for stewing, with the advantage that it can be stewed whole.

Having dwelt rather long on the importance of grading and the utilisation of the different grades, I will now turn to the next

most important subject of packing. Never mix the sorts in one package. Try and send a fair quantity of each sort or grade to market at the same time. Mark the best grades with your particular mark or brand. Whatever your package pack fairly, but as attractively as possible. Do not be induced to put the best fruit on the top of the package with inferior beneath, but have the same class of fruit throughout the packages. I believe the old system of what used to be called "topping up" is not quite as prevalent as it was some years ago; but as showing how deeply rooted it was and the little amount of confidence dealers had in English packing, I will repeat the following amusing conversation I had with a fruit dealer a few years ago. (I have told it before, but think it will bear repeating.) Some few years ago, when attending Worcester Hop Fair, I happened to notice what appeared to be a very fine hamper of fruit outside a fruit dealer's warehouse. I inquired of him if they were the same throughout. He said he hardly expected so, they never were. I then mentioned that I sold all my fruit packed the same from top to bottom of package. His answer was, "Excuse me, but I never take the word of a packer. A grower who does not top up his fruit deserves to be canonised." While we have gone on with this system of unfair packing and inferior grading what have the Americans, Canadians, and Australians done? They have captured our markets. The reason of the great success of American, Canadian, and Australian fruit is that dealers know any particular mark or brand can be depended on, and they can sell one, ten, fifty, or one hundred barrels or cases by one sample barrel or case, and buyers can buy as many as they like and come again next day and buy more exactly the same. As showing how much importance is attached to the grading of apples in America for shipping to our country, I may mention that they have formed a "National Apple-shippers' Association," which lays down rules for grading and shipping apples; and I noticed from last month's issue of a paper devoted to the trade that the association at their last meeting amended the rule concerning the requirements for a No. 1 apple, and, after stating a definite size for each grade and the varieties to be included in each grade, it lays down the rule that "No. 1 apples shall be at the time of packing practically free from the action of worms, or defacement of surface, or breaking of skin; shall be hand-picked from the

tree, and of bright and normal colour and shapely form." These are the actual words used.

I am glad, however, to say I believe of late years that our growers have improved in their packing and grading, and I fancy that our cousins across the water have got a little more careless, perhaps thinking they have now got our markets securely; but we are not quite beaten yet, and I am glad to think English apples are more in demand than they were some years back, and it is for ourselves to say if we can increase that demand.

Last spring a salesman in Glasgow (a town where nearly all the apples sold are foreign) wrote to me as follows: "I have not for years known English apples sell so well as they have this spring," and this was after one of the heaviest crops of apples we have ever had in this country. As regards the kind of package used, this to a great extent depends upon the market you are sending to. I myself am in favour of boxes or barrels, but whatever the package they are best all of one even size, holding one definite weight, as buyers or sellers do not care to be bothered with calculating the contents of various sorts and sizes of packages unless they are well paid for it.

Extra choice or specimen apples or pears should be packed carefully, one, two, or three dozen in a box, each apple or pear carefully wrapped in soft paper, one of the most suitable packing materials being what is known as wood-wool.

One of the best systems of packing apples in boxes has been demonstrated to us at several of the Crystal Palace and other shows by Mr. Archibald Weir, of Ottery St. Mary. Other best apples, and second-sized pears, are best sold in boxes holding about 40 lb., or in flats (baskets with lids holding about 40 lb.). A good deal of fruit in the London markets is sold in bushels holding about 42 lb. I prefer the flats. Barrels holding either 56 lb. or 112 lb., I think, are growing in favour in the northern markets.

Common sorts for certain markets are usually packed in what are called pots, open square baskets without lids, holding in some cases about 84 lb., in others about 112 lb.

In all cases great care should be taken to pack your fruit firmly. Line the sides of your package well with clean paper, fold the surplus ends of paper over the fruit, and place another sheet on the top. Take care the package is well filled. Be care-

ful to place your top layer of fruit to look attractive and catch the eye; a great deal of difference in the appearance of the fruit when the package is opened can be made by the care taken in placing the top layer.

If your package has an open top, and is of wicker-work, some cross hazel or other pliable sticks protects the fruit, and is much better than string or cord, which works slack. Fruit loosely packed always travels badly.

A good deal of the American and Canadian fruit is packed so firmly that a foot lever has to be used to press the fruit into the barrels; and although this sometimes indents the fruit, and is also sometimes from carelessness carried too far, fruit indented by pressure will often keep well, whereas if that indentation had been caused by a blow it would soon decay. A very good system of packing fruit in boxes or barrels is to nail or fasten on what will be the lid or top when the package is to be opened, carefully place the first layer of fruit in the bottom of the package, fill up, and press in firmly, and then nail on the bottom. When the package is ready to be opened, what was the bottom of the package forms the lid, and the top layer of fruit when unpacked is perfectly level and even, in a way which can be attained by no other method.

As regards pears, ordinary and second class can be marketed much in the same way as ordinary apples, but large and choice fruit requires extra care in packing, and should be packed under than over ripe. Those from the Channel Islands and the Continent are usually sold in boxes of a definite size, which take one dozen large fruits packed in a single layer, one and a half dozen medium, or two dozen smaller fruit, each box being marked with the growers' or packers' brand, and the number of pears it contains. Buyers, therefore, know exactly what they are buying.

DISCUSSION.

The Rev. P. CLEMENTI-SMITH, F.R.H.S., said he had had some experience in packing, and he received fruit from his friends in Como, Quebec. He rather took exception to forcing apples into barrels. The way they did it in Canada was to loosen the rings of the barrel until it was full, and then tighten the rings. Apples should not have any "play." There was a feeling, however, in Canada that the barrel system was not altogether suc-

cessful. He personally preferred the Australian system of oblong or square boxes.

Mr. WM. ROUPELL remarked that last year he had a few tons of apples sent up from one of the fruit districts, and he particularly requested that care should be taken in packing the fruit. The fruit was sent in large barrels, containing about 112 lb. The barrels were lined with a thick spongy paper, and on the top there was a pad of paper with some straw, a wicker cover being drawn tightly over the whole with strings. The apples arrived in capital condition, and the only objection to the wicker top was that it was rather a temptation to the railway men to open the barrels and occasionally test the quality of the fruit. Some of the finest fruit was very impatient of bruises. There was even a difference in that respect between American, Australian, and English apples. He fancied English apples were more juicy and more impatient of bruises than the others. The Blenheim Orange was a favourite apple, and there was an almost unlimited demand for it in London. There was hope for all who would take the trouble to grade properly. With reference to the storing of fruit, Mr. Watkins had stated that it was better to err on the side of dampness rather than dryness. He wished Mr. Watkins had been more emphatic on that subject. Generally speaking, gardeners kept their fruit a great deal too dry, and when it was sent into the house it was often shrivelled. He remembered when a boy feeling for apples in the long grass, and he found some Mannington Pearmain in excellent condition, although they had lain in the snow. Some varieties would burst with the frost, but Cox's Orange Pippin, Sturmer Pippin, and Mannington Pearmain would stand several degrees of frost without injury. Washington and American Mother would stand the frost very well, but still it was important to keep the frost out. If, however, that could not be done, they should not despair, and if they only refrained from handling the fruit, their loss from frost would be inconsiderable.

Mr. F. B. PARFITT asked whether apples packed by the dozen in card-board boxes would find a market in London.

Mr. WATKINS replied that such boxes might find a ready sale among private consumers. He did not think smaller quantities than two or three dozen would pay for market purposes.

A hearty vote of thanks was then accorded to Mr. Watkins for his paper, and the proceedings ended.

HORTICULTURAL EXHIBITION AT HAMBURG.

MAY TO SEPTEMBER, 1897.

THE Council of the Royal Horticultural Society having been requested by the authorities of the Great Hamburg 1897 Exhibition to appoint a Committee in England to further the interests of the Exhibition, the following gentlemen were nominated, with power to add to their number :—

ENGLISH COMMITTEE.

Sir Trevor Lawrence, Bart., *Chairman*.

Baron Schröder, F.R.H.S.

W. T. Thiselton Dyer, Esq., C.M.G., F.R.S., &c.

Dr. Maxwell T. Masters, F.R.S., &c.

Dr. Morris, C.M.G., F.L.S., &c.

Rev. W. Wilks, M.A., *Secretary*.

J. T. Bennett-Poe, Esq., F.R.H.S.

Philip Crowley, Esq., F.L.S., F.Z.S., &c.

Charles Shea, Esq., F.R.H.S.

H. Self Leonard, Esq., F.R.H.S.

W. Marshall, Esq., F.R.H.S.

Harry J. Veitch, Esq., F.L.S.

T. Francis Rivers, Esq., F.R.H.S.

George Bunyard, Esq., F.R.H.S.

Owen Thomas, Esq., F.R.H.S.

Steps have been taken to make the Exhibition known in the Colonies; the Secretary of State has written to the Agents-General commending it to their sympathy and support.

The Exhibition will be open from the beginning of May to the end of September; but special Competitive Shows will be held May 1 to 7, May 30 to June 3, July 2 to 6, July 30 to August 3, August 27 to September 5, September 17 to 30.

It is necessary that all plants to be planted out of doors should be entered before January 1, 1897.

Besides Flowers, Fruits, Plants, Trees, and Vegetables, all manufactured articles and implements and art objects having relation to Horticulture are invited.

The Union Steamship Company and A. Kirsten's Line of

Steamships will carry all plants and goods to and from the Exhibition free of charge, and will grant passage to the necessary attendants at half price.

The English Committee will be glad to do anything in their power to forward the interests of the Exhibition.

Schedules and Entry Forms may be obtained from *Horticultural Exhibition 1897, 3 Gr. Reichen Strasse, Hamburg, Germany.*

Other information will (as far as possible) be supplied from 117 Victoria Street, Westminster, S.W. ; but an envelope ready stamped and directed should accompany all communications.

W. WILKS, *Secretary.*

LINDLEY LIBRARY.

A PORTION of the surplus funds accruing from the great International Horticultural Exhibition and Botanical Congress, held in London in 1866, was devoted to the purchase of the library of the late Dr. Lindley, the eminent botanist, who was for many years a most zealous officer of the Royal Horticultural Society.

This Library has subsequently been largely added to by donations and by purchase. Among the donors may be mentioned H.M. the Queen, the Bentham Trustees, and other public bodies.

The books, together with the portraits of several eminent horticulturists, have been placed in the hands of Trustees, the Treasurer and Secretary of the Royal Horticultural Society being *ex-officio* members of the Trust.

The Library is intended especially for the use of Fellows and officers of the Society ; but it may, under certain conditions, be consulted by others unconnected with the Society.

At the discretion of the Trustees, and under suitable regulations, certain books may be lent for short periods to the Fellows and others. Application for the enjoyment of this privilege should be made to the Secretary of the Society.

The Library is open throughout the year, during R.H.S. office hours, but it may be closed at any time as circumstances render it necessary to do so.

A Catalogue prepared by Mr. John Weathers is now ready for the press, and certain sums have been received towards the expenses of its publication; but, as these are quite inadequate for the purpose, further donations are earnestly solicited.

The annual income at the disposal of the Trustees is very small, and only sufficient to enable them to purchase and bind the current periodicals and a few standard books.

Donations of books and illustrations of horticultural and botanical interest, as well as of funds for the maintenance and development of the Library, will be thankfully received by the Trustees,

W. CARRUTHERS, Esq., F.R.S.

Dr. ROBERT HOGG, LL.D.

Dr. MAXWELL T. MASTERS, F.R.S.

HARRY J. VEITCH, Esq., F.L.S.

PHILIP CROWLEY, Esq., F.L.S., F.Z.S.

Rev. W. WILKS, M.A.

TRIALS PROPOSED AT CHISWICK, 1897.

ZONAL PELARGONIUMS.—It is proposed to hold two trials of these in 1897:—

(i.) For testing them for out-door summer blooming.

(ii.) For testing them for in-door blooming in November and December.

Two plants of each variety should be sent in March to the Superintendent, Royal Horticultural Society Gardens, Chiswick, carefully distinguishing between those recommended for out-door and those for in-door blooming. Of any variety good for *both* purposes four plants should be sent.

VIOLAS.—These should have been sent.

GERMAN ASTERS.—Seeds to be sent as above not later than March 1, 1897.

ANNUALS.—Hardy and half-hardy, carefully distinguishing between the two. Seeds must be sent as above not later than March 1, 1897.

NEW CANNAS.—One plant of each should be sent as above on or before February 1, 1897.

FRENCH BEANS, for *forcing*.—Seeds to be sent as above on or before January 1, 1897. Not more than six varieties from any one grower. The merits will only be considered from a *forcing point of view*.

ONIONS.—Seeds should have been already sent to Chiswick for testing *autumn-sown* varieties.

POTATOS.—*New early ones only*. Tubers to be sent as above by February 1, 1897.

The object is to test the varieties with a view to determining the earliest varieties to dig, combined with good cropping and cooking qualities.

PEAS.—*New varieties only*. Seed to be sent as above on or before February 1, 1897.

BORECOLES.—Old and new varieties. Seed to be sent as above on or before February 1, 1897.

Quantities of seeds, &c., to be sent when required for trial at Chiswick.

Peas, Broad Beans, Dwarf Beans, Scarlet Runner Beans—Half a pint of seed of each variety.

Cabbages, Kales, Cauliflowers, Broccoli, Brussel Sprouts, Savoys, Carrots, Celery, Beet, Parsnip, Turnip, Leeks, Lettuce, Onions, Radish, Parsley—Half an ounce of each.

Potatos—20 tubers of each variety.

Tomatos—25 seeds of each variety.

Cucumbers, Gourds, Marrows—Six seeds of each variety.

Strawberries—20 runners of each.

New fruits, &c., one or two trees, plants, or bushes of each.

Flower Seeds—Sufficient of each variety of its kind to ensure a fair trial.

REPORT ON TOMATOS AT CHISWICK, 1896.

ONE hundred and one varieties were sent to the Gardens for trial, of which twenty-six were carefully selected stocks of older varieties of proved merit grown for the sake of comparison. They were all sown on March 2, and the four most promising seedlings were selected from each sowing. Of these one pair of each were grown under glass in 10-inch pots, and the other

pair were planted on a south border outside. The hot, dry season proved very favourable to both sets of plants, and in almost every case the growth was compact and fruitful, and entirely free from disease.

F.C.C.=First Class Certificate. **A.M.**=Award of Merit.
 $\times \times \times$ =Highly Commended. $\times \times$ =Commended.

1. Advancer (R.H.S.).—Growth compact, heavy cropper, averaging six fruits in a cluster; medium size, round, smooth, bright red, solid, excellent flavour.

2. All the Year Round **F.C.C.** 1895 (Pears, Isleworth).—Growth compact, very heavy cropper, averaging ten fruits in a cluster; egg-shaped, smooth, glossy red, solid, and of good flavour.

3. Aristocrat (Barr).—Same as No. 77.

4. Aurore Boréale (Dammann).—A scarlet form of No. 65.

5. Autocrat (Benary).—Very similar to No. 77.

6. Best of All No. 1 (Sutton).—Growth compact, heavy cropper, averaging five fruits in a cluster; large, round, smooth, deep red, solid, and of fairly good flavour.

7. Best of All No. 2 (Sutton).—Very similar in every respect to No. 6.

8. Blenheim Orange (R.H.S.).—Growth compact, moderate cropper, averaging five fruits in a cluster; large, round, smooth, yellow tinged with red, solid, and excellent flavour.

9. Brookes' Freedom $\times \times$ 1894 (Barr).—Growth rather loose, moderate cropper, averaging five fruits in a cluster; large, round, dark red, solid, and good flavour.

10. Canadian Express (Carter).—Growth compact, very heavy cropper, averaging six fruits in a cluster; very large, slightly corrugated, deep red, solid, and good flavour.

11. Chemin Rouge $\times \times \times$ 1895 (R.H.S.).—Growth compact, great bearer, averaging six fruits in a cluster; moderate size, round, smooth, bright red, flesh solid, and of excellent flavour.

12. Chemin Rouge (Watkins & Simpson).—See No. 11.

13. Cherry Shaped (R.H.S.).—Growth weak, good cropper, averaging nine fruits in a cluster; small, smooth, red, and pleasant flavour; dessert variety.

14. Chiswick Dessert (R.H.S.), **A.M.** 1896.—Growth compact, heavy cropper, averaging eight fruits in a cluster; small, round, smooth, bright shining red, solid, and excellent flavoured; dessert variety.

15. Comet $\times \times \times$ 1894 (Wrench).—Growth very compact, great bearer, averaging eight fruits to a cluster; moderate size round, smooth, dark red, solid, and fair flavour.

16. Comet (Watkins & Simpson).—See No. 15.

17. Conference **F.C.C.** 1889 (R.H.S.).—Growth compact, heavy cropper, averaging six fruits in a cluster; rather small, round, smooth, deep red, flesh solid, and good flavour.

18. Conference (Watkins & Simpson).—See No. 17.

19. Conqueror (Benary).—Growth compact, heavy cropper, averaging five fruits in a cluster; medium size, corrugated, dark red, solid, and good flavour.

20. Conqueror (Dammann).—Stock mixed.

21. Crimson Cushion (Barr).—Growth compact, moderate cropper, averaging five in a cluster; very large, slightly corrugated, solid, and good flavour.

22. Criterion (Dammann).—Growth compact, moderate cropper, averaging six fruits in a cluster; medium size, round, smooth, purple, solid, and good flavour.

23. Currant (R.H.S.).—Growth weak, fair cropper, small, red, of good flavour, only useful for dessert.

24. Daybreak (Barr).—Growth compact, heavy cropper, averaging five fruits in a cluster; round, smooth, dark red, solid, and good flavour.

25. Democrat (Benary).—Growth compact, light cropper, averaging four fruits in a cluster; large, round, smooth, bright scarlet, solid, and good flavour.

26. Duke of York $\times \times \times$ 1895 (Carter).—Growth compact and very sturdy, heavy cropper, averaging five fruits in a cluster; very large, round, smooth, rich scarlet, solid, and good flavour.

27. Early Ruby (Barr).—Growth compact, heavy cropper, averaging five fruits in a cluster; medium size, slightly corrugated, deep red, solid, and good flavour.

28. Empress (Watkins & Simpson).—Growth compact, moderate cropper, averaging four fruits in a cluster; medium size, slightly corrugated, deep scarlet, solid, and agreeable flavour.

29. Encore (Ross).—Growth compact, heavy cropper, averaging five in a cluster; medium size, round, smooth, bright red, solid, and good flavour.

30. Excelsior $\times \times \times$ 1894 (R.H.S. and Corbett).—Growth

compact, heavy cropper, averaging seven fruits in a cluster; moderate size, round, smooth, deep scarlet, flesh solid, and of fair flavour.

31. Extra Early (Barr).—Growth very compact, heavy cropper, averaging four in a cluster; medium size, flattish round, smooth, solid, and good flavour.

32. Ficarazzi (Benary).—Medium size, very much corrugated, not worth growing.

33. Ficarazzi (Dammann).—See No. 32.

34. Flambeau (Sutton).—Growth compact, heavy cropper, averaging six fruits in a cluster; medium size, round, smooth, bright red, solid, and good flavour.

35. Frogmore Selected $\times \times \times$ 1895 (Veitch).—Growth compact and strong, heavy cropper, averaging four fruits in a cluster; large, usually smooth, deep scarlet, flesh solid, and excellent flavour.

36. Gleuston Court Seedling (Wright).—Growth compact, heavy cropper, large, averaging four in a cluster; slightly corrugated, deep red, solid, and good flavour.

37. Golden Egg (Elwell).—Growth compact, heavy cropper, averaging six fruits in a cluster; egg-shaped, rather small, smooth, solid, and excellent flavour.

38. Golden King Humbert (Dobbie).—Growth moderately compact, very heavy cropper; egg-shaped, smooth, not solid, and of second-rate flavour.

39. Golden Nugget $\times \times \times$ 1894 (Sutton).—Growth compact, heavy cropper, averaging nine fruits in a cluster; small, round, smooth, solid. A fine dessert variety.

40. Golden Nugget (Benary).—See No. 39.

41. Golden Princess $\times \times \times$ 1894 (Sutton).—Growth compact, moderate cropper, averaging four fruits to a cluster; medium size, round, smooth, solid, and fair flavour.

42. Golden Queen (Benary).—Growth compact, moderate cropper; averaging four fruits in a cluster; medium size, round, smooth, solid, flavour fair.

43. Golden Queen (Sutton).—See No. 42.

44. Golden Sunrise (Barr).—Same as 59.

45. Ham Green Favourite $\times \times \times$ 1895 (R.H.S.).—Growth moderately compact, fair cropper, averaging five in a cluster; deep red, large, smooth, flesh solid, and of good flavour.

46. Heinemann's Earliest (Heinemann).—Growth compact, moderate cropper, averaging five in a cluster; large, slightly corrugated, deep scarlet, solid, and fair flavour.

47. Ifield Gem (Watkins & Simpson).—Growth compact, light cropper, averaging three fruits in a cluster; medium size, round, smooth, deep red, solid, and excellent flavour.

48. Imperial (Barr).—Growth compact, good cropper, averaging four in a cluster; round, smooth, good shape, deep scarlet, solid, and rich flavour.

49. Invincible (Hurst).—Growth moderately compact, fair cropper, averaging three fruits in a cluster; large, round, smooth, dark red, solid, good flavour. A fine exhibition variety.

50. King Humbert (Benary).—Same as No. 38, except that the fruit is red in colour.

51. King Humbert (Dammann).—See No. 50.

52. King Humbert Yellow (Dammann).—Stock mixed.

53. Large Early Red (Dammann).—A good stock of this old and well-known variety.

54. Large Red Olive Cross (Landreth, Bristol, U.S.A.).—Growth compact, moderate cropper, averaging three fruits in a cluster; very large, smooth, round, bright red, solid, and good flavour.

55. Lawrenson's No. 1 (Hurst).—Growth compact, moderate cropper, averaging four fruits in a cluster; large, round, smooth, deep red, solid, and of good flavour.

56. Lawrenson's No. 2 (Hurst).—Very similar, if not the same as Chemin Rouge.

57. Lawrenson's No. 3 (Hurst).—Growth very short and compact, heavy cropper, averaging seven fruits in a cluster; round, bright red, solid, and fair flavour.

58. Laxton's Open Air $\times \times \times$ 1894 (Laxton).—Growth compact, very heavy cropper. A good selection of the Old Early Dwarf Red.

59. Lemon Blush (Benary).—Growth compact and strong, moderate cropper, averaging four fruits in a cluster; medium size, round, smooth, yellow tinged with red, solid, and of good flavour.

60. Long Keeper (Benary).—Growth compact, light cropper, averaging three fruits in a truss; medium size, round, smooth, dark purple, solid, and fair flavour.

61. Long Keeper (Barr).—Same as No. 60.

62. Magenta (Dammann).—Growth compact, heavy cropper, averaging six fruits in a truss; medium size, round, smooth, purplish, solid, and good flavour.

63. Matchless Extra Large (Barr).—Growth fairly compact; moderate cropper, large, round, smooth, dark crimson, solid, and fair flavour.

64. McGregor Seedling (R.H.S.).—Growth compact and sturdy; moderate cropper, averaging five fruits in a cluster; large, round, smooth, scarlet, flesh solid, and good flavour.

65. Meteor (Dammann).—Growth compact, distinct bold foliage, moderate cropper, averaging three fruits in a cluster; large, corrugated, purplish, solid, second-rate flavour.

66. Meteor Upright (Barr).—Growth compact; heavy cropper, averaging six in a cluster; medium size, slightly corrugated, pale red, solid, and good flavour.

67. Mikado Scarlet (Benary).—Growth compact, heavy cropper, averaging four in a cluster; large, corrugated, solid, flavour poor.

68. Mikado (Benary).—Stock mixed.

69. Neild's Seedling (Neild) **A.M.** 1896.—Growth compact, great cropper, clusters overlapping each other, averaging six fruits each; moderate size, round, smooth, dark red, solid, and good flavour.

70. New Champion (Dobbie).—Growth compact, heavy cropper, averaging seven fruits in a cluster; medium size, round, smooth, dark red, solid, and fairly good flavour.

71. New Deep Flesh (Barr).—Growth compact; moderate cropper, averaging five in a cluster; medium size, much deeper than wide, smooth, purple, solid, and of good flavour.

72. New Golden (Barr).—Growth compact, good cropper, averaging five fruits in a cluster; medium size, round, smooth, solid, and excellent flavour.

73. Peach (R.H.S.).—Growth compact, light cropper, averaging six fruits in a cluster; small, round, purplish, solid, second-rate flavour.

74. Pear-shaped (R.H.S.).—Growth rather weak, heavy cropper; small, red, of only third-rate flavour. Not a profitable variety to grow.

75. Perfection, **F.C.C.** 1884 (R.H.S.).—A well-known variety.

76. Perfection Surpassed (Barr).—Same as No. 75.

77. Ponderosa (Benary).—Same as Nos. 85 and 78, except that the fruit is a pale red or purple colour.

78. Ponderosa Scarlet (Benary).—Same as No. 85.

79. Prince of Naples (Dammann).—Growth compact, heavy cropper, averaging six fruits in a cluster; medium size, round, smooth, dark red, solid, and good flavour.

80. Purple Cross (Landreth).—Growth compact, moderate cropper, averaging four fruits in a cluster; large, round, smooth, solid, fair flavour.

81. Royal Ruby (Watkins & Simpson).—Same as No. 27.

82. Ruby (Dammann).—Same as No. 27.

83. Scarlet Champion (Vilmorin).—Growth compact, heavy cropper, averaging five fruits in a cluster; large, round, smooth, solid, and fair flavour.

84. Scarlet Cross (Landreth).—Heavy cropper; very similar to, if not the same as, Chemin Rouge.

85. Scarlet Ponderosa (Vilmorin).—Growth very gross, light cropper, averaging two fruits in a cluster; immense, corrugated coarse in all points.

86. Semper Fructifera (Dammann).—Growth compact, very heavy cropper, averaging over forty fruits in a cluster; small, pear-shaped, smooth, bright red, solid, and good flavour. A dessert variety.

87. Soleil d'Or (Sutton).—Growth rather long-jointed, heavy cropper, averaging seven fruits in a cluster; round, smooth, deep golden, solid, and excellent flavour.

88. Sunbeam (Sutton).—Growth compact, heavy cropper, averaging six fruits in a cluster; rather small, egg-shaped, deep golden, smooth, solid, and rich flavour.

89. Sutton's A 1 $\times \times$ 1894 (Barr).—Growth compact, very similar, if not the same as Chemin Rouge.

90. Sutton's Dessert $\times \times \times$ 1894 (Sutton).—Similar in every respect to No. 39, except in the colour of the fruit, which is a deep red.

91. Tennis Ball $\times \times \times$ 1895 (R.H.S.).—Growth compact, heavy cropper, averaging seven fruits in a cluster; medium size, round, smooth, deep red, solid, and good flavour.

92. Terra Cotta (Benary).—Growth compact, good cropper, averaging six fruits in a cluster; medium size, round, smooth, solid, and fair flavour.

93. Thick-fleshed (Barr).—Growth compact, good cropper, averaging four fruits in a cluster; large, round, smooth, deep scarlet, solid, and pleasant flavour.

94. Three-celled Cross (Landreth).—Growth compact, heavy cropper, averaging six fruits in a cluster; almost egg-shaped, smooth, purplish colour, solid, and good flavour.

95. Tip-top (Toogood).—Growth compact, heavy cropper, averaging six fruits in a cluster; medium size, slightly corrugated, deep red, solid, and fair flavour.

96. Trewer's Incomparable $\times \times \times$ 1895 (Nutting).—Growth very compact, heavy cropper, averaging seven fruits in a cluster; very similar to Chemin Rouge.

97. Turner's Prolific $\times \times$ 1894 (Turner).—Growth very compact, heavy cropper, averaging seven fruits in a cluster; large, slightly corrugated, dark red, solid, and fair flavour.

98. Two-celled Cross (Landreth).—Same as No. 94, except that the fruit is a little paler in colour.

99. Yellow Peach (R.H.S.).—Same as No. 73, except in the colour of the fruit.

100. Yellow Peach (Barr).—See No. 99.

101. Young's Eclipse (Young & Dobinson), A.M. 1896.—Growth compact, very heavy cropper, averaging six fruits in a cluster; medium to large, round, smooth, bright scarlet, solid, and good flavour. A very promising variety.

REPORT ON BEETROOT AT CHISWICK, 1896.

A COLLECTION of eighty stocks of Beet were sown on June 4, but owing to the exceptionally dry season the germination was irregular, the seed coming up on three different dates, causing the growth to be somewhat uneven. On the whole, however, the trial proved satisfactory, all the varieties developing some good specimens, showing the true character of each. The roots were examined by the Committee on September 17.

A.M.=AWARD OF MERIT.

1. Arlington's Favourite (Heinemann).—Roots turnip-shaped, medium size; flesh red, mottled with white; short dark-green foliage.

2. Bassano Early Flat Red (Heinemann).—A mangold, or closely allied thereto. Very large coarse foliage.

3. Bassano Early Flat Red (Dammann).—Roots medium size, handsome; flesh a deep crimson; foliage bronzy green. Distinct from and superior to No. 2.

4. Bastian's Early Red Turnip-rooted (Heinemann).—Roots of medium size, shapely; flesh red, strongly tinged with white; foliage green.

5. Best of All (Sutton).—Roots pyriform, rather small, handsome; flesh deep red; foliage very short, black, and compact.

6. Black Selected (J. Veitch).—Roots pyriform, medium size; flesh rich blood red; foliage black.

7. Blood Red or Round Dark Early (Heinemann).—Roots medium to large; flesh very dark crimson; foliage compact and very dark bronze. Stock slightly mixed.

8. Chelsea (Heinemann).—Stock mixed.

9. Cheltenham Green-top (Watkins & Simpson) **A.M.**.—Roots moderately long, medium size; flesh deep rich crimson; foliage short, compact, and deep green.

10. Cheltenham Green-top (J. Veitch) **A.M.**.—See No. 9.

11. Cheltenham Green-top (Yates) **A.M.**.—See No. 9.

12. Cheltenham Green-top (Nutting) **A.M.**.—See No. 9.

13. Chilian (J. Veitch).—The foliage and midribs are of varied and brilliant colours. Fine for decoration purposes.

14. Covent Garden Red (Watkins & Simpson).—Roots long, medium size; flesh blood red; foliage short and black.

15. Covent Garden (Barr).—See No. 14.

16. Crapandine or Rough Skin (Heinemann).—Roots long, medium size; flesh dark red; foliage bronzy green.

17. Crapandine (Dammann).—See No. 16.

18. Crown Prince (Heinemann).—Stock mixed.

19. Dell's Black-leaved (Heinemann) **A.M.**.—Roots long, medium size; fine dark crimson flesh; foliage short, compact, and dark.

20. Dell's Black-leaf (Vilmorin) **A.M.**.—See No. 19.

21. Dell's Crimson (J. Veitch) **A.M.**.—See No. 19.

22. Dell's Celebrated Dwarf (Dobbie) **A.M.**.—See No. 19.

23. Dell's Black-leaved (Nutting) **A.M.**.—See No. 19.

24. Dell's Crimson Long Red (Dammann).—Not true to name.

25. *Dracæna*-leaved (J. Veitch).—Roots too small for use ; foliage very handsome, highly decorative.

26. Eclipse (Heinemann).—Roots medium size ; flesh pale red ; foliage dark green. Stock slightly mixed.

27. Eclipse (Benary).—A coarse form of No. 26.

28. Eclipse (J. Veitch).—Roots turnip-shaped, handsome, medium size ; flesh very dark crimson ; foliage bronzy green. Distinct from Nos. 26 and 27.

29. Eclipse Dark Red Turnip (Vilmorin).—Roots of medium size ; flesh red, with white veins ; foliage dark green. Very early.

30. Edmand's Blood Red (Benary).—Turnip-rooted ; medium size ; flesh deep red ; foliage dark green.

31. Edmand's Early Blood (Heinemann).—Turnip-rooted ; medium-sized, handsome roots ; flesh red ; short green foliage.

32. Egyptian Dark Red (Vilmorin) **A.M.**—Turnip-rooted ; medium size, handsome ; flesh very deep crimson ; short, compact dark green foliage.

33. Egyptian Turnip Earliest Dark Red (Heinemann).—Roots large ; flesh dark crimson ; foliage large and dark green.

34. Egyptian Turnip-rooted (Dobbie).—Roots large ; flesh deep crimson ; foliage bronzy green.

35. Egyptian Turnip-rooted (J. Veitch).—See No. 34.

36. Egyptian Earliest Dark Red (Benary).—Very similar to No. 34.

37. Egyptian Red Turnip (Dammann).—See No. 34.

38. Erfurt Long Black (Heinemann).—Stock mixed.

39. Erfurt Long Black Red (Benary).—Roots long, large ; deep crimson flesh ; handsome black foliage. Distinct from No. 38.

40. Erfurt Long Black Red (Heinemann).—See No. 39.

41. Gem (Sutton).—Roots fairly long, handsome, medium size ; flesh deep crimson ; foliage very short and bronzy green.

42. Green-top (Barr) **A.M.**—See No. 9.

43. Johnson's Selected (Johnson).—Roots long, medium size ; flesh deep crimson ; foliage black.

44. Leonetti (Dammann).—Turnip-rooted ; medium size ; flesh deep red ; foliage dark bronzy green.

45. Longdeep Red (Dammann).—Roots long, of great size, coarse ; too large for table use.

46. Long Smooth Blood Red (Vilmorin).—Roots long, large ; flesh dark blood red ; foliage bronzy green.

47. Maincrop (Sutton).—Roots long pyriform, medium size; flesh nearly black; foliage bronzy green. The darkest fleshed Beet in the collection.

48. Middleton Park (Watkins & Simpson).—Roots long handsome, medium size; flesh deep crimson; foliage black.

49. Middleton Park Favourite (Dobbie).—See No. 48.

50. New Purple (Dobbie).—Roots long, medium size; flesh very dark red; foliage compact and bronzy green.

51. Non Plus Ultra (Heinemann).—Roots rather long; flesh dark crimson; foliage very dark and moderately short.

52. Northumberland Red (Nutting).—Roots pyriform, medium size; flesh deep red; short compact dark foliage.

53. Nutting's Selected Dwarf (Heinemann) **A.M.**—Roots long, medium size; flesh dark crimson; foliage nearly black. A very good stock of this popular variety.

54. Nutting's Dwarf Red (Nutting) **A.M.**—See No. 53.

55. Nutting's Dark Dwarf Red (J. Veitch) **A.M.**—See No. 53.

56. Nutting's Selected (Dobbie) **A.M.**—See No. 53.

57. Osborn's Selected Dark Red (Heinemann).—Roots long, medium size; flesh pale red; foliage nearly black.

58. Perfection Dwarf Red (Hurst) **A.M.**—Roots long, medium size; flesh deep rich blood red; foliage compact and black.

59. Pine Apple (Dobbie).—Roots rather long, large; flesh dark red; foliage large and bronzy green.

60. Pine Apple (J. Veitch).—A darker and better form of No. 50.

61. Pragnell's Exhibition (J. Veitch).—A very true stock of this old and popular variety.

62. Pragnell's Exhibition (Watkins & Simpson).—A very true stock of this well-known variety.

63. Queen of the Blacks (Heinemann).—Roots long, of nice medium size; flesh blood red; rather short compact black foliage.

64. Silver or Seakale (J. Veitch).—In this variety the mid-ribs of the foliage are large and beautifully white. They are cooked and served as Seakale, the remainder of the leaves being sometimes used as a substitute for Spinach.

65. Spinach Beet (Watkins & Simpson).—This variety is useful for its leaves, which form a substitute for Spinach in hot dry weather.

66. Spinach or Green Perpetual (J. Veitch).—See No. 65.

67. Strasburg Dark Red (Heinemann).—Roots long pyriform, handsome, medium size; flesh deep blood red; foliage glossy black and compact.

68. Sugar Beet (J. Veitch).—Roots long, large; flesh white; green foliage.

69. Superb Blood Red (J. Veitch).—Roots long, medium size; flesh bright red; foliage compact and bronzy green.

70. Superb Dwarf Red (J. Veitch).—Roots long, medium size; flesh deep crimson; foliage short and bronzy green.

71. Sutton's Globe (Sutton).—Roots perfectly round, medium size; flesh red; foliage dark green.

72. Turnip-rooted Red Globe (Watkins & Simpson) **A.M.**—Roots globe shape, handsome, medium size; flesh dark red; foliage bronzy green.

73. Veitch's Superb (R. Veitch).—Roots long, medium size; flesh deep blood red; foliage bronzy black.

74. Virtus (Heinemann).—Roots long, medium size; flesh a rich blood red; foliage strong and dark green.

75. Victoria (Heinemann).—Roots long, medium size, good shape; flesh nearly black; foliage dark bronze.

76. Victoria (Dammann).—See No. 75.

77. Whyte's Early Dwarf Blood Red (Heinemann).—Roots large, long; flesh dark red; foliage deep greenish black. Coarse.

78. Yates' Blood Red (Yates).—Roots long, handsome, medium size; flesh nearly black; foliage bright bronzy black.

79. Yellow Turnip, or Round Yellow (Heinemann).—Roots of medium size; flesh yellow; pale green foliage.

80. Zulu (R. Veitch).—Roots pyriform to long, medium size; flesh dark crimson; foliage deep black and very ornamental.

REPORT ON POTATOS AT CHISWICK, 1896.

SEVENTY-THREE varieties of Potatos were grown in the Gardens this year, including some of the best varieties tried in 1895 for comparison with the new ones. The dry season suited the crop, which was, generally speaking, a good one, with comparatively

little disease. The collection was examined by the Fruit and Vegetable Committee on two occasions: First on July 31, and again on September 17, the former date being for the early, and the latter for the later varieties.

F.C.C.=First Class Certificate. **A.M.**=Award of Merit.

× × × = Highly commended. × × = Commended.

1. Advancer (Carter).—Round; white, eyes full, heavy crop, free from disease. Tall robust haulm. Late.

2. Beauty of Hebron (Sutton).—A well known variety. Crop excellent, free from disease.

3. Beech Hill Beauty (Briggs).—Round; blue, shallow eyes, light crop. Many of the tubers split. Free from disease. Tall haulm. Late.

4. Belle de Fontenay (Vilmorin).—Kidney; white, eyes full, light crop, free from disease. Short haulm. Early.

5. Birmingham (Woods).—Same as Sutton's Satisfaction. A magnificent crop of fine oval tubers.

6. Bona Fide (Ross).—Round; white, eyes full, good crop, free from disease. Short haulm. Early.

7. Bonus (Ross).—Round; white, eyes rather deep, heavy crop, free from disease. Short haulm. Early.

8. Bonnie Blush (Miles).—Oval; white, shallow eyes, good crop, free from disease. Short haulm. Early.

9. Britannia (Vilmorin).—Round; white, with full pink eyes, moderate crop, free from disease. Tall haulm. Late.

10. Britannia (Smith & Simons).—Round; white, eyes full, heavy crop, free from disease. Short haulm. Late. Distinct from the preceding.

11. Carmen's No. 3 (Wrench).—Similar to Magnum Bonum.

12. Cockerell's Seedling (Cockerell).—**A.M.** September 10, 1895.—Round; white, eyes full, fair crop, slightly diseased. Moderate haulm. Late.

13. Congress (Barr).—Oval to long; white, eyes full, heavy crop, free from disease. Very tall branching haulm. Late.

14. Conqueror (Carter).—Round to oval; white, shallow eyes, good crop, free from disease. Tall haulm. Late.

15. Duchess of Marlborough (E. S. Wiles).—Kidney; white, eyes full, heavy crop, free from disease. Tall haulm. Late.

16. Duke of Marlborough (E. S. Wiles).—Round; white,

eyes full, moderate crop of small tubers, free from disease. Late.

17. Duke of York (Daniels).—Oval to long; white, eyes full, light crop, slightly diseased. Short haulm. Second early.

18. Early Ashleaf (Sutton).—A good selection of this well-known favourite old variety. Very short haulm. One of the earliest.

19. Early Crimson Flour Ball (Daniels).—Round; red, deep eyes, moderate crop, free from disease. Short haulm. Early.

20. Early Queen (Daniels).—Kidney; pinkish white, eyes full, heavy crop, free from disease. Similar to Beauty of Hebron, but a little later.

21. Early White Kidney (Dean), **A.M.** September 17, 1896.—Kidney; white, eyes full, good crop, free from disease. Short haulm. Second early. Of excellent quality when cooked. [Mr. Fenn obtained a **F.C.C.** for Early White Kidney on August 19, 1873.]

22. Emblem (Ross).—Round to oval; white, shallow eyes, very heavy crop, free from disease. Moderate haulm. Early.

23. Famous (Ross) **A.M.** July 31, 1896.—Oval to kidney shape; white, eyes full, very heavy crop, free from disease. Moderate haulm. Early. The quality was excellent when cooked.

24. Gibson's Seedling (Gibson).—Round to oval; white, eyes full, fair crop, slightly diseased. Moderate haulm. Late.

25. Goldfinder (Carter).—Round to kidney shape; white, eyes full, heavy crop, free from disease. Tall haulm. Late.

26. Hallamshire Hero (Hughes).—Round to oval; white, eyes full, heavy crop, free from disease. Moderate haulm. Late.

27. La Bretonne (Vilmorin).—Long; white, eyes full, heavy crop, free from disease. Moderate haulm. Late.

28. Late Perfection (Ridgewell).—Round to oval; white, eyes full, moderate crop, free from disease. Tall haulm. Late.

29. Magistrate (Yates).—Round to kidney shape; white, eyes full, heavy crop, free from disease. Late.

30. Market Favourite (Hurst).—Round; white, eyes full, good crop, free from disease. Short haulm. Early.

31. Marjolin Tetard (Vilmorin).—Kidney; white, eyes full, good crop, free from disease. Short haulm. Early.

32. Murphy (Laxton Bros.).—Round; white, eyes rather deeply set, heavy crop, slightly diseased. Tall haulm. Late.

33. Nonpareil (Carter).—Round; white, eyes rather deeply set, good crop, free from disease. Tall haulm. Late.

34. Perfection (Sutton).—Round; white, eyes full, fine heavy crop, free from disease. Short haulm. Early.

35. Pink-eyed Perfection (Wiles).—Round; white, with pink eyes somewhat deeply set, heavy crop, slightly diseased. Very strong tall haulm. Late.

36. Pride of the West (Henderson).—Oval; pink, eyes full, large tubers, moderate crop, free from disease. Tall haulm. Late.

37. Pride of Tonbridge (Webber).—**A.M.** September 10, 1895. Oval; white, shallow eyes, moderate crop, free from disease. Short haulm. Late.

38. Priory Beauty (Marsh).—Oval; white, eyes full, heavy crop, tubers rather small, free from disease. Short haulm. Early.

39. Ranger (Ross).—Round; white, shallow eyes, very heavy crop, diseased. Short haulm. Early.

40. Reine des Polders 1895 (Vilmorin).—Kidney; white, shallow eyes, good shape, moderate crop, free from disease. Tall haulm. Late.

41. Reine des Polders (Vilmorin).—Round; white, with pink eyes. Not the same as Reine des Polders 1895.

42. Reliable (Daniels).—Kidney; white, eyes full, tubers very large, good crop, free from disease. Moderate haulm. Late.

43. Rex (Ross).—Round to oval; white, shallow eyes, heavy crop, slightly diseased. Tall haulm. Late.

44. Ringleader (Sutton).—Round to oval; white, eyes full, heavy crop, free from disease. Short haulm. Very early.

45. Satisfaction (Sutton).—Round to oval; white, eyes full, very heavy crop, free from disease. Short haulm. Late. A very handsome variety.

46. Saxon (Kent & Brydon), **A.M.** September 17, 1896.—Round; white, eyes full, very heavy crop, free from disease.

Moderate haulm. Late. Of excellent quality when cooked for the Committee.

47. Seedling from Chancellor (Bingham).—Round; white, eyes full, very heavy crop, free from disease. Short haulm. Late.

48. Seedling Surprise (E. S. Wiles).—Kidney; white, eyes full, light crop of small tubers, free from disease. Very tall strong haulm. Late.

49. Seedling from Duke of York (Morgan Pryce).—Round; white, eyes full, heavy crop, free from disease. Tall haulm. Moderately early.

50. Seedling (Harraway & Scott).—Oval to kidney; white, eyes full, good crop, free from disease. Tall haulm. Late.

51. Seedling (Leece).—Round; white, shallow eyes, light crop, free from disease. Short haulm. Early.

52. Seedling (Newland).—Round to oval; white, eyes full, very heavy crop, free from disease. Moderate haulm. Late.

53. Seedling (Ridgewell).—Same as Magnum Bonum.

54. Seedling (Revens).—Kidney shape; white, eyes full, light crop. Tall robust haulm. Late.

55. Sutton's A 1 (Sutton).—Round; white, rather deep eyes, moderate crop, free from disease. Short haulm. Early.

56. Supreme (Sutton).—Round to oval; white, eyes full, good crop, slightly diseased. Short haulm. Late.

57. Sutton's Triumph (Sutton), **F.C.C.** September 12, 1893; $\times \times \times$ September 17, 1896.—Round; white, eyes full, heavy crop, free from disease. Moderate haulm. Late. Of excellent quality when cooked for the Committee.

58. Syon House Prolific (Wythes), **A.M.** September 10, 1895, and $\times \times \times$ September 17, 1896.—Round; white, handsome, eyes full, heavy crop, free from disease. Tall haulm. Late.

59. The Canon (Barr).—Round to oval; white, eyes full, heavy crop, free from disease. Rather short haulm. Late. [Mr. Dean obtained a **F.C.C.** for the Canon on Sept. 20, 1892.]

60. The Topper (Gilbert).—Half round to long; white, eyes full, good crop, free from disease. Tall haulm. Late.

61. Triumph (R.H.S.).—Same as No. 57.

62. Triumph (Carter).—A good form of Magnum Bonum.

63. Vale of Cleveland (Johnson).—Round to oval; white, eyes full, good crop, free from disease. Short haulm. Early.

64. Veitch's No. 1 (R. Veitch).—Round ; white, eyes full, tubers very large, fair crop, much diseased. Late.

65. Veitch's No. 70 (J. Veitch).—Oval to kidney ; white, eyes full, good crop, free from disease. Short haulm. Early.

66. Veitch's No. 71 (J. Veitch).—Round ; white, eyes full, heavy crop, free from disease. Short haulm. Moderately early.

67. Veitch's No. 72 (J. Veitch).—Round to oval ; white, eyes full, very heavy crop, free from disease. Moderate haulm. Late.

68. Ward's Seedling (Ward).—Round ; pink, eyes full, heavy crop, free from disease. Moderate haulm. Late.

69. White Beauty of Hebron (Sutton).—Long ; white shallow eyes, heavy crop, slightly diseased. Short haulm. Early.

70. White Perfection (Daniels).—Round ; white, eyes full, moderate crop, free from disease. Short haulm. Late.

71. Windsor Castle (Sutton), **F.C.C.** September 12, 1893.—Round to oval ; white, eyes full, very heavy crop, free from disease. Moderate haulm. Early.

72. Wood's Favourite (Ridgewell).—Round to oval ; white, eyes full, light crop, free from disease. Tall haulm. Late.

73. Wythes' Seedling Kidney (Wythes).—Kidney ; white, eyes full, good crop, slightly diseased. Rather short haulm. Early.

REPORT ON TURNIPS AT CHISWICK, 1896.

SEVENTY-NINE stocks of Turnip-seed were received for trial, and all were sown on April 22. With two exceptions, all the seeds germinated freely, and the crops proved a success in spite of the very dry season. They were examined by the Fruit and Vegetable Committee on June 15, and again on June 29, to inspect the later varieties.

A further sowing of all the stocks was made on July 31, with a view to test their merits for winter use. The germination was again good, but owing to the very wet autumn most of the bulbs split, and were useless for trial purposes.

× × × = Highly commended.

1. All the Year Round (Dobbie). Pyriform, white, short top, robust; sweet flavour; late.
2. Black Round (Vilmorin). Same as No. 4; late.
3. Cattell's Silver Ball $\times \times \times$ (Dobbie). Round, of model shape, white, moderate top, robust; fine flavour; late. An excellent hot-weather variety.
4. Chirk Castle (J. Veitch). Deep round, skin black, short top, very hardy. A splendid winter variety.
5. Dobbie's Selected Swede (Dobbie). A good form of Swede.
6. Early Flat Red Top (Vilmorin). A slightly later form of No. 12.
7. Early White Milan $\times \times \times$ (Vilmorin). Flattish round, short top; very good flavour. One of the best early varieties.
8. Early White Milan $\times \times \times$ (R. Veitch). See No. 7.
9. Early White Milan $\times \times \times$ (Sutton). See No. 7.
10. Early White Milan $\times \times \times$ (Dobbie). See No. 7.
11. Early White Milan $\times \times \times$ (Wythes). See No. 7.
12. Early Red Milan $\times \times \times$ (Vilmorin). Similar in every respect to No. 7, except in the colour of the bulb, which is reddish purple at the top.
13. Early Milan $\times \times \times$ (Benary). See No. 12.
14. Early Red Milan $\times \times \times$ (Sutton). See No. 12.
15. Early Milan Strap-leaved $\times \times \times$ (Dammann). See No. 12.
16. Early Red-top $\times \times \times$ (Dammann). See No. 12.
17. Early Milan $\times \times \times$ (Heinemann). See No. 12.
18. Early Purple Top (Heinemann). See No. 12.
19. Early Red-top Strap-leaved (Dobbie). A somewhat later form of No. 12.
20. Early Red-top Strap-leaved (Heinemann). See No. 19.
21. Early Red-top Milan $\times \times \times$ (Dobbie). See No. 12.
22. Early Snowball $\times \times \times$ (Sutton). Round, white, handsome, moderate top; superior flavour; early. Stood the hot weather well.
23. Early Snowball (Heinemann). A somewhat later form of No. 22.
24. Early White Dutch (Dobbie). Round, similar to No. 22, but hardly as good; early.
25. Early White Dutch (J. Veitch). See No. 24.

26. Early White Flat Dutch (Dammann). See No. 24.
27. Early White Globe (Nutting). Deep round, good shape, robust, large top; flavour fair; moderately early.
28. Early White Stone (J. Veitch). Deep round, handsome, robust, moderate top; flavour good; medium early.
29. Extra Early Milan $\times \times \times$ (J. Veitch). See No. 12.
30. Extra Early Milan $\times \times \times$ (Dobbie). See No. 12.
31. Extra Early Paris Market (J. Veitch). A slightly later form of No. 42.
32. Flat Forcing $\times \times \times$ (Heinemann). Round, white, robust, rather small tops; flavour excellent. Stood the dry weather well.
33. Golden Ball (J. Veitch). Deep round, good shape, short tops, robust; excellent flavour; late.
34. Golden Ball (Dobbie). See No. 33.
35. Golden Ball Selected (Dobbie). See No. 33.
36. Golden Ball (Yates). See No. 33.
37. Golden Ball (Dammann). See No. 33.
38. Golden Nugget (Barr). This variety failed.
39. Green-top Stone $\times \times \times$ (J. Veitch). Large, round, handsome, robust; flavour excellent; medium early. A fine dry season variety.
40. Green-top Stone (Watkins & Simpson). See No. 39.
41. Golden Stone (Nutting). Round, good shape, short top; sweet flavour; rather late.
42. Half-long White Forcing $\times \times \times$ (Vilmorin). Pyriform, short top; extra fine flavour. Probably the best early variety.
43. Half-long White Forcing (Dammann). See No. 42.
44. Harrison's marble (Dobbie). Not a success.
45. Jersey Lily $\times \times \times$ (Vilmorin). Round, handsome, white, moderate top; excellent flavour; early. Stood the drought well.
46. Laing's Swede (Dobbie). See No. 5.
47. Large White Purple-top (Dammann). A later form of No. 12.
48. Large White Globe (Dammann). See No. 24.
49. Long Black (Dammann). This proved to be a Cabbage.
50. Long Horn Purple-top (Barr). Pyriform, good shape, short top; sweet in flavour; early.

51. Model White (Dobbie). Round, handsome, robust, moderate top; flavour good; early.
52. New Model (Watkins & Simpson). Round, rather small, white, good shape, short top; excellent flavour; early. Stood the drought well.
53. Orange Jelly (Watkins & Simpson). Round, handsome, moderate top; good flavour; late. A fine winter variety.
54. Petrowski Dark Yellow (Heinemann). The season did not suit this variety; the bulbs were small and the flesh hard; late.
55. Petrowski (Benary). Round, small, white, good shape, short top; poor flavour; late.
56. Prince Engatitschiff (Benary). Flattish round, red, short top; poor flavour; mid-season or late.
57. Purple-top Munich (J. Veitch). A later form of No. 12.
58. Red Garden Globe $\times \times \times$ (R. Veitch). Round, handsome, moderate top; excellent flavour; mid-season or late.
59. Red Globe $\times \times \times$ (J. Veitch). See No. 58.
60. Red Garden Globe $\times \times \times$ (Dobbie). See No. 58.
61. Red Globe $\times \times \times$ (Dobbie). See No. 58.
62. Red Globe $\times \times \times$ (Watkins & Simpson). See No. 58.
63. Red American Stone (J. Veitch). See No. 12.
64. Robertson's Golden Ball (Heinemann). See No. 33.
65. Russian Scarlet Flat (Benary). See No. 56.
66. Russian Scarlet Flat (Dobbie). See No. 56.
67. Strap-leaf Stone (J. Veitch). Round, white, model shape, short top; good flavour; early.
68. Scarlet Kashmir (Vilmorin). Flattish round, small top; flavour poor; early.
69. Scarlet Kashmir White-fleshed (Heinemann). See No. 68.
70. Scarlet Kashmir (Wythes). See No. 68.
71. Scarlet Flat Dutch (Barr). See No. 56.
72. Snowball (Nutting). A coarser form of No. 22.
73. The Cardinal (R. Veitch). Round, scarlet, good shape, short top; good flavour; early.
74. White Hard Winter (Vilmorin). Pyriform, handsome, short top; good flavour, late.

75. Yellow Flat Purple-top (Vilmorin). Round, good shape, short top; good flavour; mid-season.

76. Yellow Malta Flat (Dammann). Round, handsome, large top; good flavour; mid-season.

77. Yellow Malta (Dobbie). See No. 76.

78. Yellow Malta (J. Veitch). See No. 76.

79. Yellow Finland (Dammann). Round, small; not a success.

JOURNAL

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PART III.

NEW ROSES.

By the Rev. H. J. PEMBERTON, M.A.

[Read July 14, 1896.]

How wonderful has been the development of the Rose from the species with single flowers to the glorious florists' flowers of the present day, and with what rapid strides has it advanced even within the lifetime of several of our rosarians! I have a book which afforded me considerable assistance in the cultivation of the Rose some twenty-two years ago, a book which was considered to be well up to date. In it is found a list of roses for amateurs possessing small gardens, the leading roses of the day, and in this list are the following:—*Hybrid Perpetuals*: Alphonse Damoizin, Charles Lefebvre, Charles Margottin, Comtesse Cécile de Chabrilland, Duchesse de Cambacérès, François Lacharme, Général Jacqueminot, John Hopper, Jules Margottin, La Rhône, Louise Darzens, Madame Charles Wood, Madame Rivers, Madame Vidot, Mademoiselle Bonnaire, Prince Camille de Rohan, Prince Léon, Professor Koch, Sénateur Vaisse. *Tea scented*: Adam, Devoniensis, Gloire de Dijon, La Boule d'Or, Madame Falcot, Madame Willermoz, Maréchal Niel, Noire,

Reubens, Souvenir d'Elise Vardon, Souvenir d'un Ami, Viscomtesse Decazes. Well, how many of these are now to be found in a list of the best roses? Nevertheless I have grown and exhibited most of them. The advance in new roses has been so rapid that I venture to think the greater number of these varieties are unknown to many rosarians of the present day. Another thing to be noted is that this progression has been more or less confined to one section at a time. At first it was in the direction of Hybrid Perpetuals. Then from 1870 to 1880 the Tea section developed. In 1873 a new race of roses—the Hybrid Tea—was commenced by the introduction of Cheshunt Hybrid. The section, however, made but little progress until the late Mr. Bennett in 1882 and succeeding years brought out Lady Mary Fitzwilliam, Grace Darling, Viscountess Folkestone, and others. This rapid development of Hybrid Teas has led the National Rose Society to classify them as distinct from any other section of the Rose family.

It is beyond the scope of the present paper to enter into a discussion as to the definition of an Hybrid Tea, or the wisdom of according to them a distinct section. But the consideration of the Hybrid Teas as the third stage in the development of roses, other than summer-flowering roses, leads on to the next point, and a very pertinent one. What are the qualities to be sought for in new roses? In other words, what really constitutes a good rose? As an exhibitor I might be expected to regard all roses through a pair of exhibition spectacles, and, if so, all I should seek for would be form, colour, and size. But for one exhibitor there are twenty or thirty non-exhibiting rosarians, and these latter require as essential qualities of a good rose that it shall be free-flowering, sweet-smelling, and hardy. These three qualities, together with colour, are to them qualities which constitute a good rose; form and size are valuable, but incidental. On the whole the Hybrid Teas do most fulfil these requirements. Raisers of new roses must bring out roses that will suit the popular taste. We want less of the type of Her Majesty, Marchioness of Dufferin, and Marchioness of Londonderry—stiff, scentless, and producing few blooms, although they are handsome when they come—and we want more of the type of La France, Caroline Testout, Grace Darling, and Marquise de Salisbury, which for sweetness, elegance, profuseness, and hardiness are, I think, unsurpassed. We also want a perpetual Crimson Rambler

and a white Mrs. John Laing. As to the Teas, why is it that Gloire de Dijon, Caroline Kuster, and William Allen Richardson are such favourites over and above those varieties which produce magnificent blooms, such as Comtesse de Nadaillac, Cleopatra, Souvenir d'Elise, &c. ? I venture to think it lies certainly not in form, but in their free-flowering qualities. Therefore I would urge upon rose-raisers not to concentrate all their energies upon producing flowers as large as possible, but introduce anything that will bloom freely and smell sweet, and if to these they can add form they may be quite sure of the support of the general rose-loving public. But one word of warning. Should the new rose, although vigorous and free-flowering, be under the regulation exhibition size, be careful not to send it out as a Hybrid Perpetual, for these of the garden section are prohibited from the exhibition tables of the National Rose Society in the classes for garden roses. If sent out as a China or Hybrid Tea it may be shown ; but from the Garden Rose section, however suitable for the garden the rose may be—like Boule de Neige, for instance—“all Hybrid Perpetuals are entirely excluded.”

Now as to New Roses : Let us limit ourselves to those sent out during the last seven years. But to give a complete list of all the New Roses even in this period would, in the first place, be of no practical use, and, in the second, I could not afford the time to compile it. To give an idea of the enormous number annually thrown upon the market, I may say in passing that there are classes for new roses in the National Rose Society's exhibition schedules, and these new roses are such as are offered for the first time in the English nurserymen's lists for the previous three years. The National Rose Society used to prepare such a list annually, but have now wisely dropped it. The last of the lists appeared in the report of 1894, and contained no fewer than 344 “new roses,” giving an average of over 100 new roses sent out annually. What becomes of these new roses ? Each raiser doubtless sent his new roses out with a great flourish of trumpets, and with a description rich in flattering adjectives ; but on looking down the list I find only forty that I can remember ever seeing, and of these, speaking from a limited experience, not more than fourteen are really worth growing either for the garden or exhibition. May we not reasonably conclude that the vast majority are worthless, and that those who sent

them out are either very inferior judges of the qualities of a rose or else—— Well, perhaps it would be wiser not to conclude the sentence. But may I be allowed to beg of raisers, whether British or Continental, to be very careful, for the sake of their own reputation, to thoroughly test a new rose before sending it out.

Having said this much, let me, lest I weary my readers, come at once to the point as to the best new roses of the last seven years. I append a list of some of the leading roses of these years, and propose now to pass a few remarks upon some of the best. These remarks are based upon personal knowledge obtained through the cultivation, as maidens and cutbacks, of most of the varieties in the lists below, and, with two exceptions, of all those upon which comment is made.

Doubtless there are several other new roses which rosarians of a longer and wider experience may think should be found in these lists, and I should be glad if they will mention them. But personally I would rather err on the side of omission than recommend a worthless rose. And may I add that there are even some roses that would not have found a place in these lists were it not for the fact that they have received a gold medal from the National Rose Society?

Some New Roses of 1889.

Souvenir de S. A. Prince	.	.	Tea	(G. Prince); Gold Medal, N.R.S.
Lady Arthur Hill	.	.	H.P.	(A. Dickson.)
Mrs. James Wilson	.	.	Tea	(A. Dickson.)
Maid of the Mist	.	.	H.T.	(Bennett.)
Cleopatra	.	.	Tea	(Bennett.)
J. D. Pawle	.	.	H.P.	(Paul & Son.)
Paul's Cheshunt Scarlet	.	.	.	(Paul & Son.)
Augustine Guinoisseau	.	.	H.T.	(Guinoisseau.)
Gustave Piganeau	.	.	H.P.	(Pernet et Ducher.)

Some New Roses of 1890.

Dowager Duchess of Marlborough	.	H.P.	(Paul & Son.)
Jeannie Dickson	.	H.P.	(A. Dickson.)
Crimson Queen	.	H.P.	(W. Paul & Son.)

White Lady	H.P.	(W. Paul & Son.)
Caroline Testout	H.T.	(Pernet et Ducher.)
Gustave Régis	H.T.	(Pernet et Ducher.,
Madame Delville	H.T.	(Schwartz.)
Marquise de Salisbury	H.P.	(Pernet.)
Triomphe de Pernet Père		(Pernet.)
Danemark	H.T.	(Zeiner, Lassen & Dithmer.)

Some New Roses of 1891.

Mrs. Paul	B.	(Paul & Son); Gold Medal, N.R.S.
Bruce Findlay	H.P.	(Paul & Son.)
Margaret Dickson	H.P.	(A. Dickson); Gold Medal, N.R.S.
Marchioness of Dufferin	H.P.	(A. Dickson); Gold Medal, N.R.S.
Salamander	H.P.	(W. Paul & Son); Gold Medal, N.R.S.
Medea	T.	(W. Paul & Son.)
Waban	T.	(Wood & Co.)
Mdme. Pernet-Ducher	T.	(Pernet et Ducher.)
La Fraîcheur	H.T.	(Pernet et Ducher.)
Mdme. Joseph Bonnaire	H.T.	(Bonnaire.)
Kaiserin Augusta Victoria	H.P.	(Lambert & Reiter.)

Some New Roses of 1892.

Violet Queen	H.P.	(Paul & Son.)
Janet's Pride (Briar)		(Paul & Son.)
Lady Henry Grosvenor	H.T.	(Bennett.)
Mdlle. Germanie Trochon	T.	(Pernet et Ducher.)
Duke of Fife	H.P.	(Cocker.)
Spenser	H.P.	(W. Paul & Son.)

Some New Roses of 1893.

Crimson Rambler		(Turner); Gold Medal, N.R.S.
Marchioness of Londonderry	H.P.	(A. Dickson), Gold Medal, N.R.S.
Mrs. Harkness	H.P.	(Harkness.)
Captain Hayward	H.P.	(Bennett.)

Charles Gater	H.P.	(Paul & Son.)
Beauté Inconstante	T.	(Pernet et Ducher.)
Marquis de Litta	H.T.	(Pernet et Ducher.)
Bridesmaid	T.	(May.)
Corinna	T.	(W. Paul & Son.)
Maman Cochet	T.	(Cochet.)

Some New Roses of 1894.

Marchioness of Downshire	H.P.	(Dickson); Gold Medal, N.R.S.
Mrs. Sharman Crawford	H.P.	(Dickson); Gold Medal, N.R.S.
Clio	H.P.	(W. Paul & Son.)
Alister Stella Gray	N.	(Paul & Son.)
Hybrid Sweet Briars, 1st Series		(Lord Penzance.)

Some New Roses of 1895.

Mrs. W. J. Grant	H.T.	(A. Dickson); Gold Medal, N.R.S.
*Belle Siebrecht	H.T.	(Siebrecht & Wadley.)
Marjorie	H.T.	(A. Dickson.)
Helen Keller	H.P.	(A. Dickson.)
T. B. Haywood	H.P.	(Paul & Son.)
Paul's Carmine Pillar		(Paul & Son.)

New Rose of 1896.

Mrs. Frank Cant	H.P.	(Frank Cant.)
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New Hybrid Teas of Recent Introduction, suitable for the Garden.

Grace Darling		(Bennett, 1884.)
Viscount Folkstone		(Bennett, 1886.)
Bardou Job		(Nabonmand, 1887.)
Augustine Guinoisseau		(Guinoisseau, 1889.)
Caroline Testout		(Pernet et Ducher, 1890.)
Gustave Régis		(Pernet et Ducher, 1890.)
Marquisé de Salisbury		(Pernet, 1890.)

* Sent out under this name.

A BRIEF DESCRIPTION OF SOME OF THE NEW ROSES OF THE LAST SEVEN YEARS.

1889.

Souvenir de S. A. Prince.—T. A pure white sport from *Souvenir d'un Ami*. The best of the year. A good rose both for the garden and exhibition table. No collection should be without it. It was awarded the Gold Medal by the National Rose Society, and subsequent experience has fully justified the award.

Gustave Piganeau.—H.P. Brilliant carmine. A grand exhibition rose, blooming early, moderate in growth, and for this reason not suitable for the garden.

Lady Arthur Hill.—H.P. Rosy lilac, a useful addition, free-flowering, late-blooming, distinct, good form, stands well after cutting. As an exhibition rose it lacks size, except on maiden plants.

Augustine Guinoisseau.—H.T. It was, when first sent out, described as a white *La France*. This description can hardly be endorsed. A blush flower, thin, smaller than *La France*. Not an exhibition rose; but from its free-flowering quality it should be in everybody's garden.

Cleopatra.—T. Cream-coloured, with pale rose shading. A valuable variety to the exhibitor, if disbudded and thinned out freely. Very moderate in growth and, with us, delicate.

1890.

Caroline Testout.—H.T. A beautiful terra-cotta pink, more free-flowering than *La France*. Always in bloom throughout the season, early and late. Good for exhibition, better still for garden; vigorous; no garden should be without it. In my opinion it is one of the best, if not the very best, new rose of the last seven years.

Jeannie Dickson.—H.P. Silvery rose, quite distinct, having deep petals, best in bud, rather thin, preferring a cool season. On cutbacks slightly under-sized for the exhibitor, but grand blooms have been staged from maiden plants.

White Lady.—H.T. Creamy white, almost white, distinct, a good grower, deep petals, fine flowers, free-flowering.

Madame Delville.—H.P. Light red, shaded, distinct, flowers well formed, good depth of petal. Thinned and disbudded it is useful for exhibition, and will stand even in a hot tent. Its freedom in flowering makes it a good garden rose.

Gustave Régis.—H.T. Deep lemon, almost single, deep in petal, pretty in bud, very handsome when fully expanded. It is not sufficiently free-flowering to be strongly recommended for garden purposes, but it is quite worth growing.

Marquise de Salisbury.—H.T. Brilliant crimson, sometimes dazzling scarlet. Very free-flowering, semi-double, an acquisition as a garden rose.

1891.

Marchioness of Dufferin.—H.P. Rosy pink. A good exhibition rose; flowers of great size and substance; blooms early and late. Best on maiden plants, Manetti stock. As a cutback it makes but poor growth. The thin texture of the petals and globular shape make it a fair-weather, hot-season rose. It is not a variety suitable for the garden.

La Fraicheur.—H.T. Silvery rose. Deep-petalled, but thin; early. Would be a good garden rose if it had stronger growth.

1892.

Spenser.—H.P. An improved Baroness Rothschild, of the same shade of colour, but fuller and not so liable to expand. A useful rose for the exhibitor.

Duke of Fife.—H.P. A red Etienne Levet, but not quite so full. As an exhibition rose it is very treacherous, as it develops so quickly.

Janet's Pride.—Sweet Briar. Shaded pink, striped with red. Very beautiful, summer-flowering, making strong, bushy growth. It should be planted in shrubberies where it can obtain plenty of sunshine to ripen the wood.

1893.

Maman Cochet.—T. In shade varying from flesh to salmon colour, having the form of Catherine Mermet with the substance of Ernest Metz. It has been good this year (1896), and those who grow it think highly of it. It evidently rejoices in dry heat, but whether it will be as good in a less dry summer than that of 1896 remains to be proved.

Crimson Rambler.—Seldom has a rose so soon caught the public fancy as this. It has found a home in almost every garden. It is not an English rose, but, I believe, brought over from Japan. It claims the distinction of being up to the present time the only rose other than exhibition roses to which the National Rose Society has awarded the Gold Medal.

Marchioness of Londonderry.—H.P. Ivory white. This is the other gold medallist of the year. Quite a contrast to the above. An exhibition rose pure and simple, producing one bloom of great size and substance on the top of each sturdy shoot. A hot dry season rose. From an exhibitor's point of view I think it is the best white H.P. we have.

Captain Hayward.—H.P. Crimson, glorious in colour, handsome for its depth of petal. Considering the dryness of the season of 1896, it is surprising how such a thin rose could be exhibited so well as this has been this year.

Bridesmaid.—T. A deeper-coloured Catherine Mermet, distinct, vigorous; will probably take a leading position in the Tea class.

1894.

Marchioness of Downshire.—H.P. Rosy pink flowers of fair size and good substance, distinct, free-flowering, probably preferring a cool season. It promises to be a good exhibition variety.

Mrs. Sharman Crawford.—H.P. Silvery pink flowers of medium size, somewhat inclined to be thin, but stands well. It appears to require much thinning and disbudding. This also, I think, will be best in a cool season.

Clio.—H.P. Flesh colour, most distinct, and for this reason will probably prove useful to exhibitors; blooms of good size and substance.

1895.

Paul's Carmine Pillar.—Rosy carmine, single, handsome, blooming in clusters from lateral shoots, very strong in growth. It will probably prove a beautiful and useful addition to the garden roses, and is likely to become a general favourite.

W. J. Grant.—H.T. Bright rosy pink, deep-petalled. This rose, thus named, was exhibited and awarded the Gold Medal of the N.R.S. in 1892. Afterwards it was sold to an American firm, who sent it out under another name. Of this rose I have

had no personal experience, but a superb stand of it was exhibited by the raiser at the Wolverhampton Show in 1892, and if the rose maintains that high standing it will prove very valuable.

1896.

Mrs. Frank Cant.—H.P. This variety I have seen growing at Colchester. It will, I think, when sent out obtain a good position as an exhibition rose. It is distinct and of good form and substance. A cross between Baroness Rothschild and Gabriel Luizet.

DISCUSSION.

Mr. WALTER EASLEA said he would like to draw attention to a few of the newer roses, only mentioning those which Mr. Pemberton had omitted. He thought Mr. Pemberton's list was excellent so far as it went, but he hardly thought that it was sufficiently extended. He should like to add the following :—

Souvenir de Madame Sablayrolles.—Tea. A variety of great excellence. The colour is a rosy salmon, shaded with apricot; the buds before expanding are deep chamois yellow. The build of the flower is of that deep globular kind of which *Souvenir d'Elise Vardon* is the type, and it is of a good, sturdy habit. It is a cross between *Devoniensis* and *Souvenir d'Elise Vardon*.

Christine de Nouë.—Tea. Deep rosy crimson, deepening in colour towards autumn. The petal is of good substance, and the size of flower quite up to exhibition standard. It is a splendid variety for forcing.

Medea.—Tea. Perhaps the best clear yellow rose sent out for several years. It reminds one of a finely-formed Cloth of Gold. It is a first-rate variety for the exhibitor, and is unequalled for growing under glass. The habit is vigorous, but not climbing.

Kaiserin Augusta Victoria.—H.T. A superb rose; perfect alike in form, habit, and colour. This season has been rather too hot for it. The colour is of a very pale straw tint, passing to nearly white. It is very double, produced in clusters on stiff stems which carry the flowers well up above the foliage, and the form is of that peculiar pointed kind seen in *La France* and *Maréchal Niel*.

Golden Gate.—Tea. An American variety with large shell petals of a lovely cream colour tinged with rose. Perhaps one cannot call it an exhibition variety, but it certainly is worth cultivating for garden decoration.

Souvenir de Madame Antoine Levet.—Tea. In the way of William Allen Richardson, but of dwarf habit. It would make a splendid variety for massing. The flower is more perfect in form than William Allen Richardson.

Madame Pernet-Ducher.—Tea. An exceedingly free-blooming variety. The buds are of a canary yellow colour, but the expanded flower is almost pure white. A grand garden variety.

Grand Duc A. de Luxembourg.—H.T. This can be best described as a dark-coloured Viscountess Folkestone. The colour is rosy red, reverse of petals a brilliant lake, a most peculiar yet withal attractive combination. It is a variety I can confidently recommend for garden decoration.

Maman Cochet.—Tea. One of the best Tea roses distributed for several years. It has been grandly exhibited this year, nearly every stand containing a specimen. The colour is a lovely flesh; outer petals often a deep rose. The great charm of this variety is its extraordinarily deep petal, surpassing in this respect any other rose I know of. It is a great advance upon Catherine Mermet for outdoor cultivation, the growth being strong with good thick wood.

Corinna.—Tea. Flesh-coloured shaded with rose, suffused with a warm flush of tawny copper. An exceedingly attractive variety, and it has been seen in several first-prize stands this year.

G. Nabonnand.—Tea. A variety of great merit for garden decoration. It is not very double, but the petal is very large, of a clear satiny rose shaded with yellow, and the buds are very handsome.

Madame Jules Finger.—H.T. A seedling from Lady Mary Fitzwilliam. Colour creamy white; very double, and will, I believe, make a grand exhibition flower.

Madame Joseph Courbet.—H.T. A very double, bold flower of Gloire Lyonnaise colour. It is certain to be much sought after by exhibitors.

Marquise Lita.—H.P. A splendid novelty in the way of La Fraîcheur, but of better growth and deeper colour. The centre of the flower is of a deep vermilion, merging to carmine rose on

the outer petals. In a cool season this rose, I believe, will be grand for exhibitions.

Souvenir du Président Carnot.—Tea. Colour rosy flesh shaded with white. Buds long and handsome. A grand variety for forcing.

Madame Abel Châtenay.—H.T. A novel and charming colour. The buds are of deep rosy carmine, the expanded flowers being shaded with salmon. It is freely produced in large panicles. It appears to combine with its flowers and growth the good qualities of its parents, Victor Verdier and Dr. Grill.

François Dubreuil.—Tea. Certainly the best red Tea rose yet produced. The expanded flower is almost as large as a Hybrid Perpetual, eminently fitting it for exhibition, and the buds are beautifully formed, resembling a camellia. It is an excellent variety for forcing, and has received an Award of Merit from the R.H.S.

Clara Watson.—Tea. A seedling of the late Mr. Bennett's raising, and a most excellent variety. The growth is strong and the foliage very handsome. The colour is a beautiful pink shaded with salmon.

Sylph.—Tea. This splendid novelty was introduced in the spring of 1895, and this season we find it in several first-prize stands. A rose to attain this position the second year after introduction must of necessity be a first-rate variety for the exhibitor, and I can recommend it with every confidence. The habit is much stronger than *Souvenir d'Elise Vardon*, a variety it somewhat resembles; the colour is white, tinted with violet and peach—a beautiful blending of colours.

Madame Eugène Résal.—China. A seedling from Madame Laurette Messimy. The flowers are much deeper in colour, being of a beautiful coppery rose, the base of petals orange colour. A splendid acquisition for the garden.

FERN GENERATION, NORMAL AND ABNORMAL.

By Mr. CHARLES T. DRUERY, F.L.S., F.R.H.S.

[Read August 11, 1896.]

[This interesting lecture was profusely illustrated with lantern slides, which the lecturer most graphically described and explained as he proceeded. We greatly regret not being able to reproduce these illustrations, as the lecture is shorn of a very great part of its interest by such disability.—EDS.]

ALTHOUGH amongst the Fellows of the R.H.S. there are many who take a delight in the culture of Ferns, both as amateur growers and as trade producers of the millions which are annually raised for decorative purposes, there are probably few who have given the attention necessary to familiarise themselves with the very peculiar phenomena of their reproduction from the microscopic spores which ferns so copiously produce. I may therefore be pardoned by the minority who know if, for the sake of the majority who do not, I endeavour to bring before you to-day some more or less clear presentment of this phase of fern life.

In the case of flowering plants we are all familiar with the manner of the fertilisation of the seed and the subsequent production of plants thereby. The pollen grains fall upon the stigma, and emit tubes which pass through its substance until they reach the embryo seeds (ovules) already formed in the seed vessel. These are fertilised by contact thus effected, increase in size, ripen, and are then scattered abroad in a thousand and one ways to secure the perpetuation of the species. Falling upon the soil, they then under congenial conditions burst, send forth a leaf or leaves into the air and a root into the soil, and are fairly launched as a fresh generation.

With ferns, however, the process is a very different one and is carried on in all its initial stages on so microscopic a scale that its true nature baffled research until 1844, little more than fifty years ago, when Count Suminski, following up the previous discovery by Naegeli of the antheridia, or male vessels containing the antherozoids or pollen equivalents, upon the under side of the minute primary leaf or prothallus formed by the spore, discovered the archegonia, or ovaries, and in a most masterly series of drawings demonstrated the whole normal process

from beginning to end. Before, however, I pass on to this I propose to make a few preliminary remarks concerning the distribution of the spores themselves and the actual genesis of the fern plant, drawing attention to the two very distinct generations alternately produced, viz. the minute ovary-bearing generation, or prothallus, and the relatively large spore-bearing generation, constituting the ferns as popularly known.

The diagrams exhibited show the varied forms of fructification on the common polypods in the shape of rounded heaps, on the hart's-tongue as long sausage-shaped masses, and on the lastreas as small patches covered with the characteristic kidney-shaped cover. The components of these heaps are next shown largely magnified, viz. the sporangia, or spore capsules, then the spores themselves, followed by the various stages of formation of the primary leaf, or prothallus, constituting the first generation, and the organs subsequently formed on the under side of this, which by sexual interaction eventually produce the fern as we know it, or secondary generation.

It is one of the remarkable facts connected with ferns that the microscopic size of the spore and the minute herring-scale size of the prothallus it produces are common to all ferns, so that even the huge, wide-spreading tree ferns, such as the Cyatheas, Dicksonias, and others, are produced from spores which are invisible to the naked eye, and by the fertilisation of what are practically flowers, which are also so small that only practised vision can detect their existence.

Ferns, however, amply compensate for the diminutive size of the spores by their enormous numbers. I recently took a fine specimen of *Athyrium filix fœmina* in my collection, a very fertile variety of the common lady fern, and by counting the fronds and their divisions, secondary and tertiary, and multiplying these by the number of spore heaps on each of the minor divisions, these heaps again by the average number of capsules to a heap, and finally these by the number of contained spores, I arrived at the immense total of eleven hundred and twenty millions.

[The lecturer then exhibited a series of six slides, showing the splendid set of drawings by which Count Suminski illustrated his discovery, which completed the normal life cycle of the fern as above described.] Few original discoveries find such a

thorough exponent as was Count Suminski, and when we reflect that these drawings were published more than half a century ago, when the facilities for such investigation were certainly less than at present, our admiration must be increased.

The normal mode of fern-generation has now, I think, been fairly illustrated, and chronologically we come next to Professor Farlow's discovery in 1874 of the first found abnormal method, called apogamy, because it shortened the life cycle by the reproduction of the fern from a simple non-fertilised bud which formed upon the prothallus in precisely the same spot as the normally fertilised ovules occupy. *Pteris cretica* was the fern upon which this discovery was made, and on further investigation it was found to do this constantly and not exceptionally. Professor de Bary followed this up and found that our familiar crested form of male fern (*Lastrea pseudo-mas cristata*) did precisely the same thing, no archegonia being formed on any of the prothalli examined, so that all the young plants were asexually produced. The normal form of the same species produced in his cultures normal plants, but L. Kny has recently found that it also produces apogamously in some instances.

In all cases of apogamy recorded, with one exception, the young plants arise precisely as if engendered in the usual way, and their true genesis can only be verified by previous microscopic examination, when a small dark spot is seen instead of the thickened cushion bearing the archegonia, which as appendages to the ovaries are formed on the under side of the prothallus, as already mentioned. The first fronds are also identical in form with normal ones. The single exception occurs in the case of a prothallus now figured on the screen, which arose in one of my own sowings of *Athyrium filix fœmina*. This, after attaining an abnormally large size, quite half an inch across, remained dormant for several months. It then commenced to develop two horns, as figured, upon each of which, and far away, as will be seen, from the archegonial site, an ordinary bud appeared. Both these buds grew as large as pins' heads, and eventually developed fronds of some size, the first bearing no less than ten pair of pinnæ. In this case, it will be seen, the apogamic character is accentuated by the distance from the usual generative point on the under side of the prothallus, and it is further differentiated by the previous formation of a bulbil (Farlow's

plants commencing with the primary frond), and by the advanced stage of development of the first frond of the young plant itself.

We have now seen that the fern can be developed from the prothallus both sexually and asexually.

The next discovery, in 1884, was that the prothallus itself could be generated from the fern plant without the agency of the spore, and, as the first instance of this came under my own notice, I will preface its description by describing the slide now before you, as the study of bulbils led up to it. Bulbils are direct asexual reproductions on the spore-bearing generation, though, as we have seen, not confined to it. These are by no means uncommon, and the slide exhibited shows various types, as exemplified in *Woodwardia orientalis*, *Camptosorus rhizophyllus*, *Athyrium filix fœmina*, *Scolopendrium vulgare*, *Polystichum angulare*, and last, but not least, *Asplenium bulbiferum*, which is the most familiar of all.

The study of bulbils, as I have said, led to the discovery of apospory, since a pinna of *A.f.f. clarissima*, which apparently bore bulbils, was sent to me for inspection, and on investigation I found the unusual feature present of an indusium, or spore cover, which led me to a different conclusion, viz. that they were some form of transmuted spore-producing energy, and treating them on this assumption I was at once surprised and delighted to find that instead of developing ferns of the second generation, as bulbils always do, they formed prothalli instead. These prothalli then went through the usual functional process, and only then produced ferns, the first result being some three hundred specimens of a fern thitherto unique. Mr. Wollaston then brought forward a specimen of *Polystichum angulare* bearing prothalli on the points of the frond divisions, so that in a very brief period two classes of apospory were found to exist, soral and apical. Following up this line of research it has fallen to my lot to discover the same peculiarity in varieties of *Lastrea pseudo-mas*, another form of *P. angulare*, a form of *Scolopendrium vulgare*, and another *Athyrium*, the particular features of several of these cases being thrown upon the screen for better elucidation. Dr. Stansfield and Mr. E. J. Lowe have also noted some very remarkable cases of this, Mr. Lowe's consisting of *Scolopendrium* forms, in which the fronds bear the sexual organs, so that the

two generations are combined in one. Dr. Stansfield's case is that of a crested *Lastrea*, in which apospory and apogamy are conjoined, the fronds forming a fringe of prothalli and the prothalli budding out into fronds.

I now show a slide prepared from Prof. F. O. Bower's diagram of life cycles, showing how the normal cycle of fern—spore, prothallus, sexual action, fern—has been found to vary in the light of the discoveries already cited, but which can now be extended by Mr. Lang's discovery on two British species, that sporangia, or spore heaps, are actually sometimes produced on the prothallus itself, cutting out the fern proper altogether, just as correlated apospory and apogamy shorten the cycle in another way.

We have now seen that variation plays its part in the genesis of as well as in the form of ferns, as it does in all other things in nature. We also see that the hard and fast line of alternation of generation, presumed to characterise all ferns, has been broken through in numerous instances. As no less than five of these cases, involving four British species, first came under my own notice in my very limited collection, it is a fair presumption that the phenomenon is not extremely rare, and that the exotic species, if studied, would yield many more examples.

The faculty ferns possess of varying widely in their progeny is a factor I cannot ignore in a paper like this, especially as the knowledge acquired of their genesis has led to some very remarkable results in the way of crossing and hybridising. Mr. E. J. Lowe has produced some very extraordinary hart's-tongues by sowing the spores of widely different forms together, and he and others have amply demonstrated that under some circumstances, not yet so clearly understood as they ought to be, the antherozoids of one prothallus find their way to the arche-gonia of another, the results being a fern showing the compound characters of two parents. Mr. Lowe has satisfied himself that the characters of several varieties may become blended in one prothallus, and has exhibited plants showing the blend clearly enough of some five or six different varieties. The moot point is whether this is arrived at by one crossing, *i.e.* whether the archegonium is capable of being fertilised from several sources instead of only one, and this the biologist cannot see his way so far to accept unreservedly. Simple crossing, however, is an

indubitable fact, as witness, besides numerous accepted British examples, that extraordinary hybrid *Polypodium Schneiderii*, which to my mind indicates immense possibilities in similar directions. Mr. Schneider has, indeed, followed up this success by blending several other species of *Polypodium*, widely different from *P. vulgare*, with crested forms of the latter. He has kindly sent me fronds of two forms of *P. neriifolium* out of three he had raised by sowing it with *P. v. cristatum*, and another blend of *P. v. grandiceps* with *P. aureum*. *P. nigrescens* he has also crossed with *P. v. cristatum*, and obtained a crested plant. It may, of course, be argued that, as crested varieties originate spontaneously, they may not be due in these cases to crossing; but, quite apart from the fact that until these systematic sowings were made no crested forms had appeared among the innumerable seedlings raised by simple sowings, the characteristic form of crested fronds establishes the cross to experienced eyes beyond a doubt, and in the case of *P. Schneiderii* this is further established by the fact that the *P. vulgare* parent is an inconstant variety, and throws normal and partially normal fronds, as well as those finely dissected ones truly characteristic of *P. v. elegantissimum*; *P. Schneiderii* does precisely the same thing, and the dissection moreover is exactly that of our British species. The entire form, in fact, of the one is infused into the other, and blended with the large size, glaucous hue, large white rhizome, and general features of the exotic. The most exacting scientist, therefore, should be as satisfied in this case, as the mere fern expert cannot fail to be in the others. We have consequently here a twofold useful field of operations, since it is to be presumed that the tender character of the exotic is strengthened by the cross, making it hardier, while there are innumerable exotic forms which, as decorative plants, would certainly be much enhanced in beauty by similar alliances.

Finally, apart from crossing, there is the obtaining of new improved forms by simple selection of the best seedlings, and in this direction ferns are remarkable for the enormous strides they take in their progeny when once a decided variation has been started. I will conclude my paper by exhibiting several slides exemplifying this by two striking examples, viz. *P. ang. divisi-lobum plumosum densum*, Jones and Fox, of which the pedigree is shown to consist of but two grades from the normal, and

Athyrium filix-fœmina plumosum superbum and *A. f. f. pl. Drueryi* representing the two finest forms from a batch of plants raised by myself. The pedigree of *A. f. f. plumosum Drueryi*, incomparably the most beautiful lady fern ever seen, is shown on the screen as five generations from the normal, the wonderful break in the fourth generation being probably unparalleled, at any rate in its subsequent results. Finally, as a plea for the more extended culture of our beautiful varietal British ferns I show you on the screen the presentment of my own fernery, which, as it constitutes the most eloquent finale I can imagine to my lecture, I will allow to speak for itself.

LILY OF THE VALLEY FORCING.

By Mr. T. JANNOCH, F.R.H.S.

[Read August 25, 1896.]

OF the thousand and one plants which readily submit to be forced into flower out of their ordinary season it may fairly be doubted if there is one of anything like the universal popularity which the Lily of the Valley enjoys. Its history as a "forcer" goes back to half a century ago, when clumps of lilies were grown in Berlin and Hamburg in a small way to get a few blooms for Christmas and New Year. By 1856 between twenty and thirty nurserymen in and around Berlin had taken up the cultivation, but in all cases only on a small scale. In 1859-60 the largest quantity of flowering crowns that any one nurseryman produced annually was 60,000; but this gradually increased until in 1870 seventy-two acres were under cultivation in lilies outside the city of Berlin. At the present moment there are on the Continent and in England many thousands of acres devoted solely to the production of lily of the valley crowns.

In order to be successful in forcing lilies of the valley the culture of the crowns demands the first consideration. I have seen lilies grow in almost every kind of soil and situation, doing better in some than in others; but experience has taught me that the best soil for growing crowns for forcing purposes is a light sandy loam, with a damp subsoil; and the best situation

is an open one to the south and west, sheltered, if possible, from the east and north. In cold and heavy clay land they will not do well; they will grow, and sometimes produce very strong crowns, with but few fibrous roots; but such crowns are not fit for early forcing, as, owing to the nature of the soil, they are kept growing too long, and do not ripen off early enough.

The ground must be deeply dug and well broken at the same time, working in plenty of old hotbed manure, linings, rotten leaves, &c., all well decomposed and crumbled to pieces. This work should be done in the autumn in dry weather, in order to be ready for planting as soon as crowns can be obtained. I greatly prefer autumn planting, considering that the sooner the crowns are in the ground the better. Nothing is more injurious to the roots of lilies than exposure to sun and wind. I have been compelled sometimes to plant in March in drying east winds with bright sunshine, when it has been impossible to get the roots covered quickly enough to prevent their getting dry, and the consequences have been disastrous.

The ground having been prepared, the best and quickest method of planting is in rows seven or eight inches apart, the plants being about one inch apart in the rows; paths of fifteen to eighteen inches wide may be left between every eight rows for the convenience of weeding. In planting, which is done by throwing out trenches about five inches deep, take care that the crowns are not set too deep; they should be only just deep enough for the tips of the crowns to be level with the surface of the ground. A good mulching of cow manure, or, if this cannot be had, well-rotted stable manure, completes the work, and nothing further is required but keeping the beds free from weeds and giving them plenty of water in dry weather during the summer.

If one-year-old crowns have been selected for the start, they will require three seasons of growth before being fit to be lifted for forcing. It must not be supposed that so-called one-year-old crowns are actually twelve months old; they really represent only four to five months' growth, the rhizomes beginning to grow in June or July, forming the crown under ground during the summer. Thus when they are fit to lift as flowering crowns their actual age is three and a half years. It is true that by good cultivation many of these crowns will bloom in two years from the time of

planting, and many growers have been tempted to lift them at that age; but experience has taught me that the percentage of flowering crowns is smaller and the increase of planting crowns less than when they are left a year longer undisturbed. It is generally understood that lilies of the valley must be three years old before they flower, and that they will then flower every alternate year. This is the rule, but there are exceptions. By good cultivation—*i.e.* high feeding at the proper time with liquid manure—and if special care is taken to remove the flower as soon as ever it is open, by pulling its stalk right out of the crown, such crowns will bloom several years in succession; and hence it is obvious that lily crowns can be made to bloom twice within twelve months, *viz.* once at their natural time in May, and again taken up the following autumn and forced into bloom before January.

To force lilies of the valley successfully it is of the utmost importance to have well-ripened and well-matured crowns that have fully completed their growth and are perfectly at rest. Before they have undergone a period of rest, be it ever so short, you cannot force them, no matter what amount of heat you may give them. Much also depends on where and how the crowns have been grown. The best are undoubtedly those that have been grown in light sandy soil, heavily manured and well exposed to the sun, as they will complete their growth and go sooner to rest than those grown in heavy soil and shady places.

Forcing operations may commence about the end of October or beginning of November; the methods adopted are various, but for early flowers, in November and December, a close propagating or forcing pit is absolutely necessary, in order to maintain a moist and even temperature. If pots are used plant about twelve crowns in a 5-inch pot in the following manner: Place four crowns in the palm of your left hand, then a layer of soil on the roots, again four crowns and more soil, and then the remaining four crowns, keeping the crowns all level; close your hand and drop the whole into a 5-inch pot, working the soil well in between each crown, so as to have them equally divided and all crowns standing level just above the brim of the pot. Give them a good watering, and plunge the pots in a bed of either moss or cocoanut fibre; cover lightly with two or three inches of clean moss, and close the bed with boards, to keep it perfectly

dark. Bring the bottom heat up to 80° Fahrenheit at once, and gradually increase to 95° within a fortnight, maintaining a regular and even temperature the while. Never allow the thermometer to rise above 100° or to fall lower than 80°, or much harm will be done. Examine the pots daily; keep a moist atmosphere; and water (when necessary) with water of exactly the same temperature as the bottom heat in which they are plunged. When the crowns start into growth and are about two inches high, remove the top covering of moss and gradually inure them to the light, still, of course, maintaining a high temperature. As soon as the bottom bells begin to open remove to a cooler temperature and discontinue syringing overhead, as moisture hanging on the blooms is apt to spot the bells.

Another method, more usually adopted, and which saves much labour and room, is by planting the crowns an inch apart in boxes of a convenient size and treating as above.

Still another plan, but one which is not often practised now, is to plant the crowns in forcing beds thickly together, and when they have grown two or three inches to transplant them into pots.

It may be here mentioned that actual flowering can be retarded, when so desired, by the boxes in which the crowns are forced being removed from the forcing-house into a cooler one of genial temperature. The heat, however, must be always even and not too low, or else the damp will speedily ruin the flowers.

The foregoing methods refer principally to the early period, before Christmas; later in the season, and as the spring advances, forcing is an easier matter. The temperature need not be kept so regular, and all that is required is warmth and moisture, which will soon start the crowns into growth. More attention should at this later time be paid to the hardening off, shading from bright sunshine, and never allowing them to get dry at the roots; they should also have more room by planting the crowns wider apart, as more leaves will now appear than before Christmas.

Finally, it should be pointed out that if temporary frames are placed over the beds of flowering crowns out of doors in March their blooming will be hastened by two or three weeks. For this purpose keeping them close and watering as required are the only necessary directions.

It is quite immaterial in what soil the crowns are planted for

forcing, as absolutely no new roots are formed during this period; anything, in fact, which retains moisture will do. You cannot improve the blooms by planting the crowns in the very best of soil, or by giving them manure water. All the nutriment required for the development of the flowers is gathered during the previous growing season, and is stored up in the roots.



Fig. 18.—LILY OF THE VALLEY (BERLIN VAR.). (*Gardeners' Chronicle*.)

It is not generally known that forced lilies will bear almost any rough treatment. They can be pulled out of their boxes or pots when in full bloom for making up into fancy stands, ornamental pots, and nicknacks of any description without flagging or spoiling. They can be sent by post or rail hundreds of miles, packed in a little damp moss, when they may be again planted

and will look as fresh as if they had never been disturbed. I once sent a quantity in an hermetically-sealed box to Pietermaritzburg,



Fig. 19.— LILY OF THE VALLEY (DUTCH VAR.). (*Gardeners' Chronicle*.)

where they arrived after their long ocean and land journey as fresh as if they had only travelled a few miles.

As regards the varieties or "strains" best adapted for forcing, that known as the Berlin is unquestionably the best for early work. The Dutch and Hamburg ones are good for late forcing, but my experience is that they do not approach the Berlin strain for forcing before Christmas. These three varieties are said to be seedlings, or possibly "sports," from the common or wild lily of the valley, on which they are immense improvements. No amount of cultivation would ever transform the wild plant into a rival of either the Hamburg, the Berlin, or the Dutch forms. The difference between the two last-named is plainly seen in the illustrations of the "Gardeners' Chronicle" of March 25, 1876. (*See* figs. 18, 19.) The Dutch variety is of more spindly growth than the Berlin, and has, moreover, a weak and drawn appearance.

In conclusion let me say one word on the subject of retarding. Dr. Lardner once pooh-poohed the idea of a steam ship ever crossing the Atlantic, and the idea of retarding lily of the valley crowns may appear just as absurd to the casual observer. That it is now done, however, both extensively and successfully, is too well known for me to emphasise. The movement, however, is still in quite its infancy and cannot become general for some time yet, so that any lengthened consideration of this phase may safely be reserved for a future paper.

GLADIOLI.

By Mr. J. BURRELL, F.R.H.S.

[Read September 8, 1896.]

WITHIN a very short period of time the subject of the present paper has already had three lectures delivered in this hall, on its history and cultivation, by three eminent raisers and cultivators of the flower, so that it might well be asked what more can be said on the subject by a less experienced grower, like myself, when such veterans as the Rev. H. Honywood D'ombrain and Mr. Kelway, and a clever hybridist like Monsieur Lemoine, of Nancy, have so ably and fully treated the subject. It is therefore

my intention to avoid as far as possible going over the same ground again, and to confine my remarks to what I consider to be common and erroneous ideas and practices with respect to gladiolus cultivation.

And first as to the question of soil. Nearly all writers on the subject recommend a light sandy soil as being the most suitable; in fact, some go so far as to make this an essential, and condemn heavy loams as being totally unfitted for the purpose. On what grounds they speak so decidedly I have never yet been able to ascertain, but I assume that, as Holland is a great centre of bulb-growing, and as the soil there is mostly of a light and sandy nature, the writers in question take it naturally for granted that everything of the nature of a bulb or corm requires a light, sandy, humus soil for its proper development, without ever putting the matter to the test. I have grown gladioli in all kinds of soils and mixtures, and after careful consideration have come to the conclusion that the best results are obtained on a somewhat heavy yellow loam of an adhesive nature, without any admixture of sand—a soil which I consider, if anything, even of too close a texture to grow briar roses in. On such a soil we are able year after year to keep up a vigorous and healthy stock of gladioli, and no matter whether the seasons be hot or cold, dry or wet, we always have a good measure of success in producing flowers and corms. Perhaps I ought to have stated earlier that my remarks have reference to the fine hybrids of the *gandavensis* section, and I think it may be taken for granted that whatever suits these, as regards soil and general conditions, will also suit the more recent *purpureo-auratus* hybrids and *Saundersi* varieties, and these three sections it will, I think, be admitted contain all the most beautiful late-blooming gladioli worth cultivating for the beauty of their flowers. The actual species from which they have been obtained are poor things in comparison with the fine hybrids produced from them by careful hybridisation.

In recommending a somewhat heavy loam for choice I know I shall be told that splendid flowers of gladioli are produced in soils of a light, sandy, and even gravelly nature. I quite admit the fact, and I believe that as regards the mere production of fine flowers it may be done in almost any kind of soil whatever; but I should only consider a cultivator really successful when, in

addition to fine flowers, he is also able to keep up a healthy stock year after year, and this is more likely, so far as my experience goes, to be attained in a good holding loam rather than in any other kind of soil, at all events so far as the drier and warmer counties of England are concerned. In the more northern counties, where the rainfall is excessive and the climate less warm and sunny, some modification of the foregoing opinion might be necessary, and a soil of a lighter nature might be found more suitable. But it is a matter of history how, when a clever horticulturist like the late Mr. Standish attempted to grow these flowers on the light sandy soil of Bagshot, he utterly failed to increase or even to keep up a healthy stock, and their cultivation had to be abandoned. Monsieur Lemoine, on the other hand, has told us in his interesting lecture, delivered in this hall, how well he succeeds with his gladioli in his nursery at Nancy, where the soil is stiff clay, and from which he distributes his hybrids in such rapid succession. And although it does not appear that the *gandavensis* hybrids flourish there on stiff clay, they succeed admirably with us near Cambridge on a soil closely approaching clay, but where the drainage is good and the rainfall light—an average of about 18 inches a year.

Closely connected with soil comes the question of manure. Excessive manuring is extremely harmful, and is likely to generate a disease with which the whole genus is afflicted more or less, according to the nature of the cultivation given it. Of this disease I will speak later on; but when I see recommended layers of six to eight inches of manure, and mulchings of nearly the same, with frequent doses of liquid manure, I cannot help thinking it is greatly in excess of any of the requirements of gladioli in a fairly average fertile soil, and I am sure that a portion of the manure and liquid would be much more profitably employed on some of the gross-feeding kitchen garden crops rather than in encouraging disease among the gladioli. We mostly grow our bulbs, or rather corms, on ground which has been well manured for the previous crop, where, for instance, dahlias or roses have been grown the previous autumn, and this, we find, produces quite as good results as when we specially manured the ground for the gladioli alone. An excess of humus in the soil is distinctly harmful, and the stock will remain far healthier in what is termed clean soil. Our ground is

manured with ordinary stable dung; we have at times applied moderate dressings of bone meal, fish manure, muriate of potash, and other artificial manures, but all with doubtful results. We have sometimes given part of our stock a slight mulching with fresh straw litter, but have generally found those grown without any mulching to do equally well. We carefully avoid mulchings of close rank manures, and never apply liquid manure in any form whatever. Clean cultivation is the best.

Although our average rainfall is so light (not exceeding 18 inches) we rarely ever water the growing plants; in fact, they seem to prefer a dry spring and a somewhat dry, warm summer. The hot, dry summer of 1893, for instance, seemed to suit them to perfection, as the finest growth and flowers we ever had were produced in the early part of August of that year, when the plants had very little rainfall and great heat and no artificial watering. The extreme drought and dryness of the air during the present summer (1896) has been too great an extreme on the side of dryness, and the plants suffered during August for lack of rain and moisture in the atmosphere. Up to the end of July they never looked better, and were of wonderful health and vigour, but they appear to require a fair amount of moisture near the blooming period. That they prefer dry and warm conditions, rather than those of an opposite nature, seems to have been noticed by Dean Herbert in the earliest period of hybrid gladioli. So far back as the year 1847, when writing of the greater hardiness of *psittacinus*, one of the parents of the present race of *gandavensis* hybrids, he goes on to state that it suffers much from July rains in many positions.

With reference to the fungus disease which attacks the corms of these plants, and with which the whole genus appears to be more or less affected, no remedy for its complete eradication has yet been found. Various suggestions have been thrown out, among others that of breeding new races direct from the species, and some importance is attached to the reintroduction of *oppositiflorus*, a plant of considerable vigour. But I am strongly of opinion that the late Monsieur Souchet, the originator of the fine *gandavensis* hybrids, himself used *oppositiflorus*, or hybrids from it, in producing his earliest light-coloured varieties, and any one continuing the work of raising seedlings from them, will now and again have tall light-coloured varieties springing up,

with their flowers placed in opposite directions to each other, and all opening nearly at the same time, just like *oppositiflorus*, as some few others almost reproduce the typical *gandavensis*, although a great many generations removed from it. A gladiolus with its flowers placed in opposite directions on the spike is a poor garden plant, compared to one with its flowers all facing in one direction, and I have no faith in going back to the species as a remedy for improving their constitution. As an instance of this I may mention that a hybrid was given to us for trial, a cross between a very vigorous variety and *Saundersi*, and this became so badly diseased the first season we grew it that it died outright soon after blooming, whilst many of the old hybrids raised more than twenty years ago, growing in the same bed and under exactly the same conditions, remained in vigorous health.

There may not be much natural affinity between gladiolus and potatoes, but both are plants more or less affected with fungoid diseases difficult to combat, and the latter serves the purpose of a good illustration on this point. Mr. Sutton, in his interesting lecture on the potato delivered in this hall last year,* related his experience of crossing varieties of potatoes with some of the species of *Solanum*, without obtaining any good results in securing varieties proof against disease. Such, I think, would be the case with gladioli, if we recommenced afresh from the species. As in the case of potatoes, I would rather look to clean cultivation, and the selection of vigorous hybrids as parents, and the raising of young stock to replace worn-out corms, as is done in the case of most garden plants. My own annual loss from disease barely reaches 10 per cent. Many people appear to have an idea that a gladiolus should increase stock in the same way as a narcissus, by the old bulbs increasing by natural division; and no doubt to a certain extent this is so; but this mode of increase eventually wears out, and it is to the young bulblets which cluster at the base that we must look for perpetuating varieties for an indefinite period. Otherwise named collections of gladioli would not exist, where the stock of any given variety could be obtained by the hundred or thousand, as is the case with many varieties at the present time.

A paper on gladiolus would hardly be complete without some reference to the various sections of the flower. Many of the

* See *R.H.S. Journal*, Vol. XIX., Part 3, p. 387.

early varieties are pretty garden flowers ; among these may be mentioned Colvillei and its white variety, known as "The Bride," so largely grown for cut flowers ; some few varieties of the *nanus* section and of the later summer-blooming *ramosus* section, followed by the fine hybrids of the *Lemoinei* and *Nanceanus* sections, which, thanks to the exertions of Monsieur Lemoine, have considerably prolonged the blooming season of gladioli, as they fill up the gap between the *ramosus* and *gandavensis* sections ; many of both sections exhibit remarkable combinations of colours, and as they become more and more infused with the *gandavensis* blood, to increase the number of flowers opening at the same time, and to give a more erect habit of holding their flowers up, instead of looking at the ground, which is the fault of many, I believe we shall have at no distant date remarkable and new colours, including all shades of blue, and giving flowers and spikes equal in size to the fine *gandavensis* varieties, and, like the latter, opening a considerable number of flowers at the same time without loss of constitution. As many of the hybrids of *gandavensis* are as yet unrivalled in vigour, size, and beauty of flower and spikes, I do not fear loss of constitution by an infusion of the good qualities of these into other sections, in order to obtain a greater variety of novel colours.

HARDY SUMMER FLOWERS.

By Mr. E. BURRELL.

[Read October 13, 1896.]

IN dealing with this subject I do not propose to extend my remarks to all the many flowers we are now able to utilise for summer gardening, but rather to confine myself to the consideration of a few families that have come very prominently to the front within the last few years, and which make in their several seasons so gratifying a display. And instead of treating of the flower garden as a whole I purpose dealing with the garden and beds in the immediate neighbourhood of the dwelling-house, severely geometrical with box edgings and tiny gravel paths, or informal on the turf, as the case may be.

You will doubtless remember that when, some few years ago,

the demand for hardy flowers caused the geometrical garden to be filled with them, the planting was not always carried out in the best of taste. I yield to none in my admiration of hardy flowers, but it is difficult to appreciate a style that filled small beds with tall straggling flowers, some of them with only a short season and whose foliage is quickly over, leaving nothing but a few bare sticks and dying leaves. Therefore let me say at the outset, if your hardy flowers can by any means have a position in isolated beds on turf this is where they are seen at their best; but if a geometrical garden exists, and it is the will of the employer that, although it is to be filled with hardy plants, the pattern is not to be disturbed, the planting must be carried out with a wise discrimination and the exercise of taste.

It may be added that the opportunity of filling certain beds mainly or wholly with one family of plants, and the chance thereby offered of catering for individual wants, leads to a more improved cultivation in the case of many things than when they are crowded together with many other species in the same bed. It may be also well to note that the greater part of the experience herein recorded has been gathered in a garden south of the Thames, fairly well sheltered, the soil being naturally dry and sandy, with a subsoil of sand very close to the surface. In fact, I suppose the upper part is really sand improved by cultivation.

Before passing on to the consideration of some specialities let me offer a hearty tribute of thanks, and in so doing I shall carry with me the whole of my brother professionals, to those enthusiasts in the art who by raising so many good things have helped so much to enrich our gardens. Those of us, for instance, who remember the phloxes and delphiniums of a quarter of a century ago, together with the first tufted pansy, and can compare them in our mind's eye with the marvellously beautiful varieties of to-day, are able to appreciate to the fullest extent the wonderful improvements that have been effected.

A very valuable point in connection with nearly all hardy flowers is the ease with which they are propagated, and a small stock of some really good thing once acquired we are able to quickly work up a good number by the aid of cuttings, layers, or division. Unless an extra large stock is required the two latter methods of increase are preferable where they can be practised, especially if the soil is light and it is essential to have

good, strong plants; and in seasons like those of 1893 and 1896 the strongest plants have naturally the best chance.

Touching the planting of hardy things let me advocate the advisability of a very careful selection in the case of all mixed beds. There are some hardy plants that go well together, and that are, in fact, seen to the best advantage when associated with other things; but there are others, such as megaseas and saxifrages, and campanulas, that are best alone, and one or two beds may be reserved for their especial benefit. Taking the campanulas, for instance, and those members of the family now generally known under the name of *Platycodon*, we have a very fine variety—especially in the different heights and habits of growth—and, as the flowering season is proportionately varied, we may obtain from beds of this one family alone a very interesting and prolonged display.

In the general planting operations those species that are most useful, and are as a rule represented by many varieties, may be roughly divided in the matter of height into three classes, viz. dwarf, medium, and tall. A short list of the things we find most useful would include antirrhinums, campanulas, carnations, delphiniums, helianthus, lobelias, gypsophylla, pinks, pyrethrums, phloxes, pentstemons, poppies, tufted pansies, statice, starworts, veronicas.

ANTIRRHINUMS.—The remarks made above as to the nature of our soil are sufficient to show that the antirrhinum is thoroughly at home, and it is one of the best and most enduring of hardy flowers. I have secured thoroughly good strains in the white, yellow, primrose, scarlet, and crimson shades, and hold fast by these in preference to the fancy flowers. When old plants are left they are cut hard back, and the ground being slightly pricked with a fork a mulching is put on in early winter. A fair batch of cuttings is put in every year, to ensure retention of the stock. The first spike of flower is removed directly the lower blooms show signs of decay, to allow of the more rapid development of side-growths, and sometimes if the plants are a bit weakly the centres are pinched out before flowering. It may be noted here that the prompt removal of all decaying flowers (with their seed pods) is an important point in the culture of all hardy plants, in order to secure a lengthened display.

CAMPANULAS.—Let me repeat my recommendation that a

large bed be set aside for the special benefit of the campanulas, and if they are well planted, with due regard to their respective heights and the many different shades of colour, a very interesting display will be the result. True, one does not get in this family the variety of colour obtainable in many other things, but they vary from a Cambridge blue to an intense purple, and the white varieties are very fine.

CARNATIONS.—These do remarkably well with me; they are put out quite early in the autumn, and the loss even in the most severe winters has never exceeded 5 per cent. Early layering is practised, to secure strong plants, and alike for layering and in the preparation of the beds I find spent mushroom or peat moss manure most serviceable, on account of its moisture-retaining properties when incorporated with the natural soil, and a heavy mulch of the same material is put on the beds immediately the planting is finished. Comparison of experience between different parts of the country shows that varieties vary in point of hardiness in different soils and situations, so that it is impossible to lay down a hard and fast rule as to sorts which would be anywhere and everywhere reliable.

DELPHINIUMS.—Although, perhaps, the finest of all tall hardy flowers, they are not naturally successful here—that is to say, I cannot plant them as I do other things and be confident of good results in the open borders. The foliage mildews badly and the flowers are short-lived. They do better on a partially-shaded border where the natural soil has been replaced by a mixture of three parts stiff road sidings and one of cow manure.

SUN FLOWERS.—Of the different forms of *helianthus* grown I think the most useful are *lætiflorus*, *multiflorus maximus*, *plenus*, and *soleil d'or*. Hardly any genus is more easily cultivated or gives such excellent results with a minimum of trouble. I find it, however, advisable on our soil to lift them, say, every third or fourth year, replanting the strongest pieces.

LOBELIAS.—Herbaceous lobelias were formerly only seen in just a few gardens, but they have advanced rapidly in favour the last few years, and make very striking beds when planted in bold clumps on a carpet of pinks, tufted pansy “White Swan,” or the silvery veronicas. A correspondence as to their hardiness elicits the fact that it is found necessary to lift them in some gardens. Here at Claremont, however, I always leave them in

the ground, unless their removal is desired to other quarters, when, if the new position is not ready for them, they are packed tightly in boxes and placed in a cold frame. Crowns that remain in the ground get, with the approach of winter, a heavy mulching of half-decayed leaves.

PANSIES.—Of the tufted pansies I cannot speak too highly. At the time of writing this (early in September) they have been in flower five months and are still gay. To ensure such an enduring display on a soil like ours they have to be planted either (preferably) in autumn or as early in the year as the state of the ground permits. They have a mulching of peat moss manure as soon as they are planted, and in summers like 1893 and 1896 one tremendous soaking of water just when the first flowers are over. An early insertion of cuttings is found advisable—not later than the end of July. This combined with the prompt removal of all dying flowers is sufficient to ensure a bright carpet of flowers from mid-spring until quite the end of summer.

PHLOXES.—It is, I fancy, now generally acknowledged that all large beds that are over fifteen feet in diameter should be filled with bold, strong stuff, and possibly a good selection of the *suffruticosa* and *decussata* phloxes in combination would yield to no flower for an effective and enduring display; the newer varieties in both sections are simply magnificent. Reverting for a moment to the note made above as to the wonderful improvement in the flowers, I brought the other day from a corner in the pleasure ground a spike of the old white phlox that has been growing there for years, and compared it with the new, “*Diadem*,” verily a tribute to the skill of the florist. In planting a big bed of phloxes bold clumps of the two sections may be alternated, and then if the top is pinched out of the earlier varieties directly the flowers are past, smaller side spikes will be developed and blossom with their later brethren. The bed for their reception should be bastard trenched and enriched with good manure. A good mulching is also advisable if the summer seems likely to prove hot and dry.

PYRETHRUMS.—Both the single and double flowered varieties are among the most useful of early flowers, and they do well if given fairly good treatment in any ordinary border. For large beds a mixture of these with pentstemons, each planted in bold clumps, is decidedly effective. The old foliage can be trimmed

away a little as soon as the flowers are over, and fresh green growth will spring up and serve as an admirable green carpet to the intervening spikes of pentstemons. Pyrethrums hold out well in the same spot for several years, but as soon as the tufts begin to force themselves upward they should be lifted, divided, and replanted. In the case of pentstemons, when a good strain has been acquired a batch of cuttings can be inserted in September and wintered in a cold frame.

ASTERS.—Starworts, to give them the most appropriate English name—for Michaelmas daisies is surely a misnomer in the case of many varieties—are probably the most easily grown of all hardy flowers. They will do in almost any soil, although they are seen to the greatest advantages in one that errs on the retentive side. Given a judicious selection, there is no class to equal them in endurance, for they begin flowering before the end of July, and in a mild autumn I have cut grand flowers in quantity the first week in December, and plenty of varieties are available to represent in their respective seasons the whole of the time between these two periods. As is the case with all the species already mentioned, marvellous improvement is manifest in the newer forms of asters; whilst the fact that one of our leading firms, specialists in starworts, catalogue no less than 100 varieties is sufficient evidence that a splendid selection can be made, and those of us who have to supply an unlimited quantity of cut flowers can testify to their enormous value for this particular purpose. Let me recommend especially “Purity,” *cordifolius albus*, and “Diana,” the forms of *vimineus* and *diffusus*, *ericoides*, and the old *Tradescanti*. Large beds in pleasure grounds may with advantage be devoted to this family, so filling them with the different sections as to secure a prolonged display. I should add that with the single exception of carnations there is no family more susceptible to the attack of that very obnoxious animal the rabbit than starworts, and it is useless to plant in any situation that is not thoroughly free from this pest.

VERONICAS.—Both the flowering and foliage sections can be used effectively in almost any description of bed—indeed, a mixture of the varieties of *longifolia* with *spicata alba*, *Teucrium*, *prostrata*, and *repens* makes a very charming combination.

GYPSOPHYLLA.—No mention of hardy flowers would be complete that did not include *Gypsophylla paniculata*, and certainly the cultivation of no single plant has increased to such an extent in a given time as this. It has evidently come to stay, quite as much from its graceful appearance in the garden as for its immense value in a cut form. Is it quite hardy? I ask because several neighbours testify to its total loss in the February of 1895, and I was unable to say if this was altogether the result of frost, having mulched my crowns heavily early in the winter.

There are several other families, possibly quite as worthy to be mentioned in a paper of this kind as those already enumerated, notably pæonies, irises, and spiræas; but their endurance from a flowering standpoint is not so great, and they are therefore not so well adapted for the particular part of the flower garden under consideration.

Before closing this paper I should like to express the hope that all who have to do in one way or the other with cottage shows, gardens, and allotments may give an occasional suggestion as to the increased cultivation of these hardy flowers, with a hint in the matter of planting, so as to secure a long display of bloom. So far as my own experience is concerned I have found that when once the cottager realises this latter point he is only very anxious to substitute a judicious selection of hardy plants for the odds and ends of bedding plants he may have been able to acquire. And how well many of the hardy flowers thrive in those old cottage gardens! I remember in the course of one or two rambles along the Surrey lanes looking enviously at occasional magnificent clumps of fritillarias, day and plantain lilies, and the like, and later at the really marvellous growth of the tall autumnal flowers.

DISCUSSION.

MR. DOUGLAS said he was once in the neighbourhood of Manchester, and a friend pointed out a phlox which he said had grown in the same position for twenty years. A phlox that remained that length of time in one place would not suit him—nor yet four years. A common way to propagate phloxes was by division, but this was rather a rough and ready method. He was

glad of the reference to carnations. Good-rooted plants he never knew to die, although many people were afraid to try them. He saw plants which had been planted out in November in Northumberland and Durham stand the winter admirably.

CHRYSANTHEMUMS.

By Mr. W. H. LEES.

[Read October 27, 1896.]

My endeavour in writing this paper must be chiefly confined to the management of plants grown for the production of specimen flowers; but before considering this I should like to offer a few remarks on the wonderful progress that has been made in raising new varieties during the six years which have passed since the very interesting and exhaustive Conference on Chrysanthemums held by this Society in November 1889.

Mr. Harman Payne, in concluding a most interesting contribution to that meeting on the history of the plant, made the following prophetic remark: "What surprises are in store for us in the near future no one can tell, but I venture to predict there will be many, for the remarkable extension of Chrysanthemum growing in all parts of the world must inevitably lead to much that we can scarcely conceive." How fully this prediction has been justified is well known to most of us, but a reference to the lists of varieties published in the Conference Report will perhaps show better than I can otherwise convey, the rapid strides that have been made, more especially in the Japanese section. At that time "Mme. Clémence Audiguier" was considered the best Japanese variety, yet in the returns for 1895 it was not even included in the best hundred; in fact, quoting from an audit, compiled by Mr. C. E. Shea, of the varieties exhibited last season on the principal prize stands throughout the country, it was only once shown in a total of 188 varieties, which plainly shows what an enormous number must have been introduced, to supersede it to such an overwhelming extent. Of these 188, only 23 were in commerce previous to 1891. 'Boule d'Or' (for a long time a great favourite) is the oldest of

them, having been raised in 1882, but it will scarcely stand the test of another season.

Besides those of English origin, Japan, Australia, New Zealand, and Italy have contributed a share of the improvements, but the greatest number of good things have come from France and America. Of the French raisers, Mons. Ernest Calvat stands a long way first; his novelties sent over during the past few years have been of the highest excellence, as instanced by "Mme. Carnot," "Mons. Panckoucke," "M. Chenon de Léch ," "Australian Gold," and many others. One of the faults, however, of our foreign friends is that they often choose such unwieldy names for their seedlings. English raisers, though they labour under the disadvantage of an ungenerous climate for seed production, have lately supplied some really first-rate varieties, and from last season's experience there seems to be every promise of the foreigner finding serious rivals in this country in the raising of new varieties.

The interest in the Chinese or incurved section seems to be rather on the decline. This may be partly owing to the formal character of the blossoms, and doubtless also because so many people fail to produce good flowers, the reason of which is generally through selecting too early a flower bud, and often through growing them too strongly, by which means the buds are apt to come deformed or refuse to develop at all. It is to be regretted that raisers have not paid more attention to this class, for the addition of meritorious new ones has been very limited; in fact, varieties introduced thirty years ago are still amongst the best, and yet they are well worth growing, as their perfect contour affords a charming contrast to the beautifully informal blossoms of the Japanese.

The single-flowered varieties have most deservedly advanced in popularity, and next to the Japanese they form quite the most useful group of decorative Chrysanthemums. For growing in small pots they are especially useful; and either in this form or as cut flowers they lend themselves to all kinds of arrangements, and will surely increase in popularity as their merits become better known.

The old reflexed type of flower like 'Christine' and its sports are gradually being driven out of cultivation in face of the many and various forms of the Japanese; but the best of the

Anemone-flowered section are pretty, and deserve a place in large collections, if only to be grown as what are termed "decorative" varieties. Under this latter head are included many very beautiful varieties, but in private gardens they have been somewhat neglected of late years in favour of the larger flowers.

Early border varieties now form quite an indispensable part of the flower garden from August to the end of October, and the recent additions to this class are decided gains both in habit of growth and in the colour of the flowers. They well repay careful attention, for they withstand the rains and cold nights of autumn better than most hardy flowers at that time of the year, and when frost has ruined all the tender blossoms of other plants, there can always be found a gathering of Chrysanthemums, often indeed far into November.

With such a wealth of variety in all sections, one of the chief difficulties seems to be to decide what *not* to grow; for the almost bewildering number of new introductions offered each season, generally with such tempting descriptions, makes it troublesome for the grower, who wishes to be up to date, to keep his collection within any reasonable limits. It has become more than ever necessary that before a novelty is granted the honour of a First Class Certificate, it should be proved to be not merely a good thing, but a distinct gain in every way on existing varieties, in order that the public may take with confidence anything so recommended. I believe there were not less than one hundred new Japanese offered for the first time by English firms last season, and thirty-six were awarded First Class Certificates.

Turning now to the culture of plants to produce specimen flowers, I will only notice briefly the routine points of cultivation, as these are so simple, and so generally known and understood, that it will be better in following the growth of the plant from the cutting stage onwards to deal mostly with considerations of management which are of more interest.

PROPAGATION may commence about the middle of December with the late varieties, and this work may be continued with good results up to the end of January, finishing with those which flower early. It is very important that good sturdy cuttings should be selected: those of a weakly nature lose so much time in making up their constitution that they rarely develop first-rate flowers.

A good method of rooting the cuttings is to plant them in light sandy soil, and after once watering thoroughly, place them under handlights on a moist bed well up to the glass in a cool greenhouse; a temperature ranging between 40° and 50° is most suitable. Daily attention must be given, and the frames must be kept closed to prevent the leaves flagging. Roots will form in from a month to six weeks, and as soon as this is evident air must be admitted gradually to harden the tender plants to the exposure of the house; then the lights may be removed altogether, and an occasional fine spraying overhead will help to sustain them. When well rooted a shift into 3½-inch pots will be necessary, using soil composed of equal parts loam and leaf-mould with coarse sand; replace the plants in a good light position in the cool house where they may have plenty of air on all favourable occasions. Avoid carefully the extremes of a close atmosphere or cold draughts, as either condition is detrimental to the well-being of the plants. The aim must be to maintain a steady, robust, and uninterrupted growth. Early in March cold frames will afford sufficient protection if covered so as to exclude frost, and in genial weather the lights may be removed entirely through the middle of the day. A further potting into 6-inch pots must be given as soon as the soil is well filled with roots; the soil at this stage should be of about two-thirds loam and one-third leaf-soil and decayed horse-manure in equal parts, with sufficient sand to ensure porosity.

Firm potting is very essential, especially if the loam is of a light nature; and, unless the weather is very dry and warm, water will not be needed at the root for two or three days after repotting; frequent damping overhead will, however, be of much service to the plants. Water *thoroughly* whenever it is necessary, and with care, as injudicious watering, I am convinced, is the cause of many failures. The rule should be never to water a plant before it requires it, and then give it a good soaking.

STOPPING.—This very important item of management is actually the timing of the flower-buds, and requires attention from April onwards. The opinion once held that the best results were obtained from plants grown naturally, has given way of late years in favour of pinching the points, at various dates, to assist the flower-bud to form at a time most suitable to its finest development, and it is an undoubted fact that many varieties

require individual treatment to secure first-rate blossoms, and that no haphazard management will be attended with consistent success.

The natural break, which occurs some time during April or May, according to the variety, is produced by the forming of a bud in the point of the shoot. This causes several growths to appear immediately below it, and as we find that the average plant will perfect three blooms, a like number of these shoots are allowed to grow on. The next bud which forms is the "crown-bud," and on some varieties this will develop the best flower; but as a general rule if the crown-buds form before the 10th or later than the 25th August, they do not result in good flowers. In the first case they are too early, dull in colour, coarse in petal, or in some cases the buds refuse to expand at all. From a late bud, unless it be in the incurved section, the flowers are generally too small and thin, with a large disc in the centre. We have therefore to time the bud to form about the middle of August. To instance how this may be done take "Mrs. Falconer Jameson," which forms its bud too late; pinch the point away from the plant on April 10, and the next bud will appear about August 10, which will perfect a flower of first-rate quality. "Florence Davis" forms its crown-bud too early and a succeeding one too late; but if pinched on April 15 and the second crown-bud secured by August 25, the resulting flower will be good, very different in character to the greenish-looking specimens generally seen. There are some varieties, like "Phœbus," which form their second crown-buds naturally in good time, and some even form a third, though these are few: "M. Chenon de Léché" and "Viscountess Hambleden" are examples.

In the incurved section, "Queen of England," grown naturally in our district, will form its crown-bud about August 10, which is too early for this class; but by pinching the plant on April 10 we anticipate the natural break, hasten the formation of the crown-bud, and thus allow time for a second crown-bud to appear by the end of August, which, under proper conditions, will result in a well-formed flower.

It will thus be seen that in this important matter of bud selection we aim at a definite period, extending over a few days only, in which to secure the bud in order to obtain a flower of the greatest excellence. A conspicuous proof of this is found in

“Etoile de Lyon,” buds of which taken on or about August 12 will yield flowers which are rightly judged coarse, but if not formed until the 25th the blooms will be of good size and colour, and of beautifully reflexed form. A few incurved varieties produce the best blooms from terminal buds, which, as the word implies, are the last ones formed.

THE FINAL POTTING.—When danger of frost is past, the plants are best stood in a sunny position in the open, if possible sheltered from the north and east; they may be freely syringed overhead morning and afternoon on fine days, and a firm, short-jointed growth encouraged as much as possible. By about the middle of May the pots should be well filled with roots, and re-potting will be needed into the size in which the plants are to flower. A 10-inch pot is most suitable for most varieties, though some few weak growers are best in 8- or 9-inch ones. The soil for this shift should contain more manure, though of course how much depends on the quality of the loam; if this is of a poor nature, give more than if it is rich and fibrous. An excellent mixture consists of about three parts of a good though heavy loam, broken up roughly, the remaining part leaf-soil and horse-manure; to this may be added a small proportion of finely ground bones, and old lime rubble and ashes from burnt garden refuse to keep it porous.

It is a common mistake to mix too great a quantity of strong manures in the soil; soot in particular I cannot recommend, except in very small quantities. It is much better given in a liquid state later in the season, or sprinkled on the soil as a top-dressing to be watered in.

In potting make the soil evenly firm throughout; keep the ball of roots low enough to ensure about half an inch of new soil covering it, and fill the pots to within $1\frac{1}{2}$ inch of the rim.

The summer position of the plants will of course be governed by circumstances. It is best to arrange them in rows, about 5 feet apart and 2 feet from each other in the rows, running north and south. The object is to give them as much exposure as possible, in order to obtain a well-matured growth: this is quite as important in cultivating Chrysanthemums as in the case of fruit crops. Stakes calculated to suit the ultimate height of the plants must be given and secured to wires strained from stout uprights. Syringing overhead may be continued with advantage

after all bright days until the middle of August, when the heavy night dews then prevalent will render this less necessary. Tying of shoots and destruction of insect pests must be promptly attended to at all times, for if these latter are allowed to remain on the plants injury will soon result.

FEEDING.—By the third week in July the pots will be well filled with roots, and feeding may commence with the use of soot-water and liquid cow-manure in a weak state. This may be given at about every third watering, increasing the strength and frequency of the supplies as time goes on, taking care always not to overfeed the plants. Change the sort of manure every week, but in using any of the various excellent chemical fertilisers remember that a small dressing at frequent intervals is much better than risking injury to the roots by an overdose. The various animal manures and soot are best placed in a coarse hemp bag in the water-tanks to keep the liquid free from sediment, which, with frequent watering, would soon collect on the surface of the soil and prevent the free passage of water and air to the roots. Sulphate of ammonia or nitrate of soda, if used at all, should always be given in very weak solution; about half an ounce to two gallons of water is quite safe. They are not, however, really wanted unless as a stimulant to backward plants after housing, to encourage the buds and hasten their development.

Moderate feeding may be continued until the blooms are half expanded, but it is well to be guided by atmospheric conditions somewhat: in dull rainy weather much less is needed than if hot and dry conditions prevail. Some varieties, too, need less than others, and a careful study of this will well repay the cultivator. For example, take the old variety “Boule d’Or”; grown naturally this is almost a single flower, and to produce it in good condition it has to be built up by liberal feeding and by obtaining an early flower-bud. When this latter is secured its development must be encouraged as much as possible in order to multiply and strengthen the number of florets. On the other hand, ‘Avalanche,’ which is a very double flower and forms its bud early in August, is spoilt by too strong growing. The aim in this case should be not to unduly increase the number of petals by too free a use of manure. Incurved varieties, as a rule, do not require to be grown so strongly as the Japanese. From

the time the leaves are all fully developed, until the flowers commence to open, less manure should be given, as there is then no appreciable extension of growth, and consequently less need of food supplies; but when the petals begin to unfold feeding will be necessary at each watering.

A top-dressing of rich soil applied early in August will greatly assist the plants by encouraging new roots near the surface: about half an inch pressed on firmly is ample.

HOUSING OF PLANTS.—Towards the end of September accommodation for the plants under glass must be arranged, as after this the fast swelling buds are best under cover. Abundant ventilation will be necessary for the first week, after which the plants will have become accustomed to their changed conditions, and air may be admitted according to the outside temperature. When the blossoms begin to expand the pipes must be kept warmed slightly, and if damp, foggy weather prevails, give a little extra heat to dispel the moisture in the air, and keep a buoyant atmosphere. An average temperature of 53° is best for the opening blossoms, and a little top ventilation should be given constantly unless the nights are very cold.

Less water at the roots will suffice when the plants are once inside, and if possible a circulation of air amongst the pots should be encouraged. The opening blooms should be shaded from bright sunshine, and the shade may be made permanent after they are half developed.

Before the flowers get too far advanced fumigate thoroughly on several successive evenings, to destroy all insect pests, as aphides and thrip do much harm if once allowed to establish themselves in the flowers.

INSECTS.—These are more or less troublesome all the season, but the worst enemy of all is the thrip. These insects are very minute, and feed on the tender points of the shoots, hence they often escape notice till much harm has been done. Crippled leaves, blind points, and most deformities of growth are due to this, and as they are so inconspicuous, frequently the injury they have done the plants is the first intimation of their presence. The best remedy is to dust tobacco powder in the points regularly, and this at the same time will keep aphides at bay. Another good method is to use one of the small pneumatic spray-diffusers charged with a dilution of some insecticide.

This is an economical plan, and easily applied, but must be attended to during the whole time that the plants remain outside, after which fumigation is most effectual.

The leaf-mining grub of the celery fly rarely does much harm, and earwigs, too, though troublesome, can only be trapped or removed by hand. A very much worse pest to deal with is a green insect about the size of a small fly, though more compact in shape, which infests the plants during the latter part of August and September; this insect lives on the tender leaves at the points, and does more mischief than is generally supposed; it may be caught by hand, but it is very active, and has been more numerous than usual this past season (1896).

Ladybirds are amongst our friends. The young larvæ of these insects live on aphides, and do no harm whatever to the plants.

DISEASES.—The only troublesome disease is what is known as “damping” of the blooms. This is usually most prevalent after a dull, wet season, and is really the result of badly matured or too gross growth. It is caused by a combination of a too liberal use of manures and the restriction of the number of growths on the plants to obtain specimen flowers. A good proof of this is the fact that bush-grown plants are never affected by the disease, because they have ample outlet for all the food the roots can supply, no matter how much feeding may be given. No remedy will entirely check the disease when once it asserts itself; all that may then be done to mitigate the evil is to preserve a dry atmosphere, withhold all manures, and keep the plants as dry at the roots as is consistent with safety. We have turned plants out of their pots and rubbed off a quantity of feeding roots near the outside, and even this did not check the trouble; neither did half severing the shoot nor scraping the bark round beneath the blossom have any apparent effect. If you take a shoot from a badly affected plant, you will generally find the stem hollow and the pith discoloured; I believe that this is decay being transmitted to the flowers by the sap, and is the sole cause of the disease.

Certain varieties are more subject to damping than others, the most susceptible I know being “Colonel Smith,” “William Seward,” and “Eda Prass.” The practical inference to be gleaned from this is that in proportion as they exhibit signs of liability to the disease, so much the less manure does such a

variety require. The endeavour should therefore be to avoid as far as possible the cause of the evil by obtaining a steady, well-matured growth through careful management and moderate feeding of the plants.

Mildew, which generally attacks the foliage in late summer, and especially after the plants are placed in the houses, may be very easily checked by dusting on flowers of sulphur.

Other troubles in this way to which the plants are subject are not of such serious moment, and generally result from too much manure being given. Certain varieties lose their foliage, or their flower-buds decay before they are fully grown, from this cause. The spot which appears on the foliage of some kinds in late summer is due to too much atmospheric moisture, and is remedied by removing the plants inside.

I append short lists of the best varieties in the various sections in case they may be of interest :—

Best 24 Japanese.

Mme. Carnot.
Mons. Panckoucke.
Viviand Morel.
Chas. Davis.
Col. Smith.
Edwin Molyneux.
Phœbus.
Oceana.
Mrs. W. H. Lees.
Mutual Friend.
Thos. Wilkins.
M. Chenon de Léché.
Mdlle. Thérèse Rey.
Calvat's Australian Gold.
Edith Tabor.
Mons. Chas. Molin.
G. C. Schwabe.
Louise.
Chas. Shrimpton.
Reine d'Angleterre.
Miss Dorothy Shea.
Lady Byron.
Robt. Owen.
Souvenir de petite Amie.

Best 24 incurved.

Chas. H. Curtis.
Empress of India.
Golden Empress.
Lord Alcester.
Queen of England.
John Lambert.
Alfred Salter.
Princess of Wales.
Miss Haggas.
Mrs. Coleman.
Miss Violet Tomlin.
Jeanne d'Arc.
Robt. Petfield.
Globe d'Or.
Lord Rosebery.
Mr. Jas. Murray.
Mme. Darier.
J. Agate.
Baron Hirsch.
Lord Wolseley.
Lady Dorothy.
Princess Teck.
Hero of Stoke Newington.
D. B. Crane.

Best 12 early border varieties.

Early Blush.	Comtesse Foucher de Caria.
Piercy's Seedling.	Gaspard Boucharlet.
Flora.	Lady Fitzwygram.
Harvest Home.	Mme. Marie Masse.
Ryecroft Glory.	Sam Barlow.
L'Ami Condérchet.	Queen of the Earlies.

Best 12 single-flowered varieties.

Jane.	Yellow Jane.
Purity.	Mayblossom.
Mary Anderson.	America.
Miss Rose.	Mrs. D. B. Crane.
Mrs. Langtry.	Miss Annie Holden.
Mrs. A. E. Stubbs.	Golden Star.

18 decorative varieties in order of flowering from November to January.

Lady Selborne.	Pallanza.
Wm. Holmes.	Tokio.
Elsie.	Mrs. Filkins.
Source d'Or.	Boule de Neige.
Elaine.	Golden Gem.
Mdlle. Lacroix.	Golden Dart.
Mr. Chas. Shea.	L. Canning.
Wm. Robinson.	Tuxedo.
Roseum Superbum.	Princess Victoria.

SEED-GROWING.

By Mr. ROBERT FIFE, F.R.H.S.

[Read November 10, 1896.]

THERE are certain industries which seem to come into the very closest contact with every individual member of society. Probably the first of these to arrest our attention will be that industry by which our people are clothed; but is there not another of perhaps even greater importance—that by which our

people are fed? It may not at first sight appear clear that there can be any very close relationship between the feeding of a people and the question you expect me to speak upon—namely, Seed-growing. As we dip, however, a little deeper into what might be termed a rather capacious subject we shall find that there are few industries—for seed-growing is an industry—so intimately connected with human welfare, if we consider health and pleasure to be of primary importance. A recent writer in the “*Journal of Horticulture*” says, “The garden contributes enormously to the necessities of life.” The plentiful use of vegetable products is always looked upon as one of the safeguards of health; and may not those floral treasures also which cheer and beautify the home have a similar elevating tendency?

It is hardly possible for us to realise the enormous amount of vegetable and floral produce that passes through the markets of our great towns every year; but, even were we in possession of that information, to get the sum total we must add the private supplies of the gardens of the cottage and the hall. The figures, if we did get them, would be simply bewildering, and yet perhaps ninety per cent. of all this is the direct produce of seeds—most of the remainder may be described as indirect—hence the interest all may or ought to have in the production of seeds. And why? Because every one wishes—or should wish—to have the best vegetables and the best flowers—vegetables of the highest nutritive value and of the finest flavour, flowers of the most perfect form, colour, and sweetness. These things can only be obtained from the very best strains of seeds, which in their turn can only be secured by a process of seed-growing to which it is my purpose to refer.

Seed-growing has, no doubt, been carried on in a way, in all ages of the world and amongst most nations; but it is only when it comes into close contact with civilisation that it appears as a work of acknowledged importance. It is a notable fact that the taste for a garden and its produce is more and more marked as we rise in the standard of refinement. To meet the demands of our own country alone, extensive breadths at home, on the Continent, and in America are annually devoted to the production of seeds, and each distinctive climate or soil excels in the raising of some particular varieties. The extent of the

trade, the countries most interested, and the localities suitable for individual kinds are too large a part of the subject to deal with at present, and the difficulty of getting anything like correct details is wellnigh insurmountable. I propose, therefore, to confine myself to the more limited sphere of my own work, and to say something on that division of seed-growing with which I am more closely identified. The demand for higher-class seeds has in recent years revolutionised to some extent the seed trade, and now nearly every house in the trade has, or is supposed to have, its own special strains. I will endeavour to give my ideas as to the principles which should govern the production of high-class seeds, and also say something of the methods which I pursue, and which—whether right or wrong—have to my mind given satisfactory results.

At this point it may not be out of place to say that there are comparatively few people who have taken the trouble to inform themselves as to what a seed really is—what a world of life there is within the little shell by which it is enclosed, what a power for good or for evil may have been exercised upon it, as it on the parent plant became a germ of life. Those only who go in for hybridising, cross-breeding, and raising of new varieties of plants can realise this to the fullest extent, for as they watch the development of the seed into the plant, and the plant into full foliage, or flower, or fruit, there is a little flutter in the cultivator's breast until he knows whether (and how much) success may have crowned his efforts. Dealing, then, with such interesting subjects on a large scale, and with such teeming millions of dormant vegetable life, it is of particular moment to the seed-grower to know not only that his seeds are of pure blood, but that they are developed in a manner befitting the important place they are to fill in providing for the pleasure and the sustenance of man and beast.

With such ideas before us let us approach the more practical part of the work, bearing in mind that the plants we are now dealing with are in very few ways to be compared with the originals of their type which may still be found growing wild in many parts of the world. The improvement which has been made up to our own time we are expected not only to maintain but to surpass. This object can be accomplished by either or both of two different methods, each of which

has some special advantages. I refer to selection and cross fertilisation.

Seeds, it is true, can be and are in some cases grown by the ordinary method of sow and reap, sow and reap the same stocks from year to year, without calling in the aid of either of the methods I have mentioned. It will hardly be necessary to point out that such a course is a mistaken one, but until a large proportion of our people begin to understand that low-priced seeds are not necessarily really the cheapest, so long will there be a demand for seeds thus grown, and given the demand the supply will quickly come.

I will first speak of seed-growing by selection. In the raising of new varieties cross fertilisation may be indispensable, but in the fixing of a type nothing can beat selection.

The term "selected seeds" will no doubt be applicable to various qualities, and these will be of a higher or lower grade according to the ideas of the grower as to what a "selected" strain means. One grower may only consider his stock selected when his seed has been grown from the produce of picked plants, roots, or bulbs, while another may act upon the principle (or want of it) that once selected is always selected. My own idea of "selected seeds" is the crop immediately produced by such plants, roots, or bulbs as have themselves undergone the process of careful selection during the preceding season. Take, for example, a crop of beet-root for seed. Where the roots are wanted for culinary or exhibition purposes every shapely root is cut or nicked with a knife. The seed produced by the very finest ranks, as of the highest quality, is reserved specially for competitors at exhibitions or those wanting very choice seeds indeed; and the next quality is a choice strain for more general use. Each quality is grown together in a block, and all unshapely roots, or those of inferior flesh, are unhesitatingly thrown away. Choice carrots are nicked in the same way. Turnips, leeks, onions, parsnips, and all such crops go through precisely the same process, with the exception of the cutting. And I should add that a few of the very best—the *crème de la crème*—of each kind are reserved as the foundation for future work.

Cabbages, kales, parsley, and other such crops growing above ground, including asters, marigolds, &c., in the floral

department, are staked or marked in a particular way, so that there may be no difficulty in recognising the higher qualities when the selecting or seed-saving time comes round. The harvesters then cut or remove those, and only those thus marked, without the necessity of themselves having any intimate knowledge of the qualities of the plant most to be desired. This process costs time, labour, and incessant care, but the manifold subsequent advantages may be easily seen. And between such methods and the haphazard sow and reap a vast gulf may be discerned, and hence the varying prices for seeds which may bear practically the same name.

Seed-growing by cross fertilisation—that is, by artificial or hand fertilisation—I will merely touch on. This method is adopted when it is desired to cross two varieties each of which possesses certain good qualities which are lacking in the other, the object being to combine and reproduce as far as possible in one plant the good qualities of both parents. It is also practised on certain classes of plants grown under such conditions or blooming at such seasons as preclude the possibility of their being fertilised in the usual way. Many of our choice flowers would produce little or no seed but for the adoption of this method. The begonia is a good illustration of this class of plants, which also includes petunias, primulas, and others.

Heredity is particularly strong in plant life, and all plants that have been improved and brought by human diligence and skill to their present state of perfection have a tendency, when opportunity occurs, to revert to (or towards) their original form, and this the grower must ever be on his guard to prevent. A prominent American seedsman says, "Eternal vigilance is the price of safety."

Some subjects readily yield themselves to the process of improvement; others, again, are very obstinate. Take, for example, a variety of calendula to which I have given close attention for many years with the view of fixing a particular type. The lemon-coloured variety responds readily, but the orange has proved a very ungovernable subject. I have repeatedly saved seeds from plants bearing flowers of almost perfect form and colour—every inferior plant being carefully thrown away. The following season would see from such seed a batch of plants bearing flowers of all shades from deep orange

to lemon, and of as varying forms and doubleness. And it may further be interesting to mention that I have seen the best of these deep orange flowered plants removed when in bloom to an isolated position and replanted, and the check caused by the removal has influenced the plants to produce flowers of a lemon colour, which gradually deepened again to orange as the plants became established.

The French marigold is another illustration of a sportive plant. Yellow, striped, or crimson flowers may be, and often are, produced on a plant at the same time, the first more likely when the growth is slow, the last when growth is rapid. It will be evident, therefore, that to fix a correctly and permanently striped type will demand more than usual care. As a class it rapidly deteriorates unless the utmost watchfulness is bestowed on its selection, and some years ago it seemed that the utmost one could do was to maintain the standard which had been already achieved. I appealed to Mr. Dobbie for the light of his long experience, and that gentleman assured me he had seen as good flowers fifty years ago as then. Cold cheer this for an enthusiast, but I thought perhaps his memory had failed him. So I set to work with renewed effort, saved seed from almost every type of flower, isolated such plants as were pre-eminently good, and now, after a series of exhaustive experiments through several seasons, I have the satisfaction of finding myself certainly nearer to the coveted goal of perfectly striped flowers on plants that never vary.

M. Vilmorin, of Paris, mentions some experiments he made with the annual *Chrysanthemum carinatum*. He sowed seeds saved from double, semi-double, and single flowers growing on the same plant, and the results in all cases were the same. Before I had read of M. Vilmorin's trials I had grown plants from seeds saved in the same manner, and the result only confirms the French experiments.

The fancy pansy, again, is another plant that will not as yet come true from seed, however carefully it may be saved to name or colour. A large number of seedlings were this year grown on our grounds under the parental names, and looking at the beds when in full bloom one would have said that the seeds must have been very carefully mixed. I saw in a Berkshire garden this season some thousands of seedlings all produced from the seeds

of one variety, and grown in a perfectly isolated position. The variation was most extraordinary.

The single dahlia may be cited as an example of a flower that can hardly avoid being self-fertilised; but what remarkable variation in colour is to be found in plants produced from the most carefully saved seed of one variety! True it is that colour is the most variable feature, but still the form of the flower, the habit of the plant, and the shape of the leaves are also often very diverse.

I have dwelt longer on this part of my subject than I should perhaps have done, my desire being to point out some of the difficulties which beset the path of the seed-grower in his endeavour to produce a stock that will come true to character. Some buyers naturally expect that, as like produces like as a general rule, so all their seeds should come perfectly true—that is, exactly like the parent plants. That golden age may be on its way, but it has not yet arrived, and until the day dawns they must grin at and bear a little variation.

Isolation is a word that should be printed in large type in the vocabulary of every seed-grower. Many subjects come true, although the various colours may be grown alongside of each other. Quilled asters and sweet peas may be taken as examples. Among the former I have never yet had a cross or a sport. On the other hand, African and French marigolds readily cross and produce genuine half-breeds.

It is a doubtful question how far the various types of brassicas will cross with each other. Ordinary garden turnips have not, so far as I am aware, shown any tendency to cross with cabbages, sprouts, or kales. I have been conducting some interesting experiments with garden turnips, to ascertain how far they may be inclined to cross with one another. I planted side by side two roots of "Golden Ball" and two of "Model White," two of "Golden Ball" and two of "Red Globe," and so on through all the combinations I could form with eight varieties. The seeds were carefully saved and sown, but this present autumn has been against their coming quickly to maturity. I find, however, that where "Golden Ball" and "Red Globe" have been grown together the red variety has given to the yellow a distinct purple top, and the white-fleshed "Red Globe" has become quite yellow in its colour. The "Red Globe," again, seems to have given quite a purple top to "Model White;" but,

except a lessening of the purple colour on the top, I cannot see any change that "Model White" has effected on its companion. Both, of course, are white-fleshed. "Early Red Milan" seems to have changed the character of "Model White" to a purple-topped variety, and "Model White" to have given its partner a greater depth of flesh. Most of the other varieties were more or less crossed, thus showing the dangers that must be avoided by a careful system of isolation in order to secure a true strain.

Speaking on this matter leads me on to say that pollen of one variety of a plant may be more active than that of another variety. In the year 1895 some bulbs of "Cranston's Excelsior" onion were planted alongside specimens of "Dobbies' Selected Red." The idea in view was to determine how far they would cross with each other, and if possible produce a new onion. The seed saved from "Excelsior" produced plants and bulbs to all appearance—with only two exceptions—the same as the parent. The two exceptions were bulbs of a light brown colour. On the other hand the seed from the red variety gave just the opposite result. The bulbs resembling the seed parent were very few indeed, the majority being of a reddish brown colour and much deeper in form than the red variety that produced them. The pollen of the "Excelsior" variety seems to have almost entirely overpowered the other. Mr. Martin Smith, the well-known carnation specialist, finds considerable variation in the powers of the male parent to reproduce itself. With some varieties, such as the yellows, the pollen from plants of another colour seems all-powerful, but, on the other hand, the pollen of yellow varieties does not seem to have any appreciable effect on varieties of different colour. (See the "Royal Horticultural Society's Journal" of August, 1896, p. xlii.)

Where seed-growing is carried on to any great extent it will be reasonable to expect that certain variations will take place in the habit, colour, or other qualities of the plant or flower. A sharp look-out for these "breaks" must be kept, and any tendency to develop in a desirable direction must be encouraged. Quite new forms, types, or colours may be permanently fixed in many, or even in most, cases, although it may in some instances take years to accomplish. "Antirrhinum Yellow Queen," which this year received the $\times \times \times$ after trial at Chiswick, was only secured after several years of isolation, inbreeding, and selection;

and I am now working up its counterpart in a pure white by the same process. In some classes of plants there seems to be scarcely any limit to the development that may take place, and sometimes in quite opposite and unexpected directions too.

It is a remarkable fact that throughout both vegetable and floral life the more highly developed a plant or flower becomes, the power to produce seed generally becomes less and less, and as a rule the seeds that are produced are not of such high germinating power as those of their inferior brethren. Plants thus seem to lend themselves to improvement for our benefit, but not for their own good. Take the pansy as an illustration. The poorer varieties are literally covered with seed pods, while many of the high-class florists' flowers hardly ever produce a fertile seed at all, and hence the present high value of genuine fancy pansy seed. In African marigolds and asters of the best types the seed is scarce, and relatively speaking weak, owing, no doubt, to the size of the flowers and the consequent crowded condition of the petals. The very finest cockscombs produce very little seed, while those of inferior form are very prolific. Brussels sprouts are good examples in the vegetable department. Where the sprouts are firm and good very few side shoots are formed to produce seed, while the opposite is the case with an inferior variety. Cabbages of high quality and great solidity are poor seeders, for the same reason. It will thus be observed that in choice seed-growing the cost of production is in inverse ratio to the quantity of seed obtained.

Before concluding I ought, perhaps, just to notice the belief that some people have that seed taken from a particular part of a plant or seed pod will give better results than that taken from another; for example, they argue that Brussels sprouts seed should be gathered from the shoots originating in the sprouts themselves, and not from the centre stem, and that parsley, to be good, should be taken from the centre stem only. I have been told that to get marigolds quite double the seeds should be saved from the three outermost rows of the seed vessel. I need hardly say that these ideas have been proved to be perfectly unfounded, and that seeds saved from any part of the same plant will give equal results. M. Vilmorin, of Paris, is very emphatic on this point, and no one doubts that gentleman's authority to speak on such a subject.

DISCUSSION.

Mr. LONG, of Wisbech, said that one of the first and most important considerations of the seed-grower lies in his choice of soils, which of necessity must be varied from light to rich loam and strong heavy soil, in order that he may be successful with the great variety of plants he will have under cultivation.

Another most important matter is the careful selection of roots and plants from which the "stock seeds" are to be raised. This is the foundation upon which he is to work, and precision as to form, colour, weight, and foliage are very essential points, in order to obtain stocks of the highest and most desirable type. All the roots and plants selected must be most carefully transplanted at suitable distances, and when the seed produce has been gathered it is necessary to put it to the test with other stocks of high repute, by growing fully-developed roots and plants for comparison.

The several varieties of Swede turnip should be grown well apart; particular attention must be paid to green and purple topped varieties to maintain pure stocks.

Mr. LONG said that in some seasons he had seen very peculiar freaks among the crops of growing Swede turnips. In some parts of the field may be seen peculiar malformed roots, with a strong bushy growth of stem and leaves. On examination many of these plants have a purely purple neck, but for some reason fail to form a bulb, while on another part of the same field the whole crop is faultless. Another singular fact is that seed from the same parcel has been sown the following year, and no malformed roots have appeared, but a crop of handsome-shaped bulbs, thus showing that it cannot in any way be attributed to the fault of the seed-grower. This suggests that the soil, atmospheric influence, or some other cause increases the tendency of the Swede turnip to revert back to the original parent plant, *Brassica campestris*, or the wild rape, which in its wild state may be considered a worthless weed.

The many kinds of garden and cattle cabbages are most important items in the mind and care of the seed-grower. Darwin tells us that from an experiment made by planting green and purple kohlrabi, borecole, Savoy, and sugar-loaf cabbage in close proximity, the seeds from them produced mongrel plants

of the most complicated varieties, the result of cross fertilisation. But from experiments and observations made with several varieties of cabbage he was of opinion that *Brassica oleracea* (cabbage) will not interfertilise with *Brassica campestris*, the origin of the Swede turnip, or with *Brassica Napus*, the origin of the common turnip in all its varieties. At the same time it must not be forgotten that in cabbages there is a tendency to revert back to the typical nature of the plant, unless great care and selection are exercised, as it is not by mere chance that the excellent cabbages we see are produced, but by the grower's practical experience.

The blooming season is a most important one to the seed-grower, and claims his attention before the bees can do any injury. The florist has means within his reach to prevent hybridising by bees if he wishes. With the open fields the seed-grower is at a great disadvantage; therefore he must be fully observant upon his growing crops. To the bees we owe a very great deal, as florists will admit, as we so often see them from the blooming of the aconite and crocus and all through the summer laden with yellow pollen, dusty as a miller, and most interesting if caught and placed under the microscope, to behold their varied store, gathered from many flowers, easily to be distinguished, with which they might convey serious unintended injury. Therefore the watchful eye of the practical seed-grower must be most vigilant all through his district during the blooming of various plants, to get all harmful kinds removed, which at times is a most costly undertaking; otherwise most serious injury might be done to his crops, destroying that which has cost him much labour.

The district in which he resides is famous for its great seed-growing industry in every branch; it is there in the months of May and June, among other things, many hundreds of acres of mustard can be seen in bloom, extending as far as the eye can reach. During the last few years the mustard crops have suffered very much by an attack of a beetle (*Phædon betulae*), which does not confine itself to this crop alone. He had seen large fields wholly destroyed by these pests, clearing the whole of the plants as they pass from one side of a field to the other, being one black mass of devouring insects.

FLORAL DEMONSTRATION.

By the Rev. GEO. HENSLOW, M.A., F.L.S., &c.

[Given November 24, 1896.]

PROFESSOR HENSLOW first drew attention to a hybrid between *Primula obconica* (pod-bearer) and the semi-wild form of *P. sinensis* (pollen-bearer). Beyond having rather larger flowers there was no visible character decidedly derived from *P. sinensis*. The present plant was raised by Mr. Hyde, of Ealing. It appeared to be a case of extreme prepotency on the part of the mother plant. The lecturer alluded to the peculiar property of *P. obconica* in its producing eczema on the hands of some people. A somewhat analogous result accrues from handling hyacinth bulbs. In the latter case, however, the result was due to minute crystals in the cells of the scales.

A collection of gloxinias, all bearing erect, trumpet-shaped flowers, called for the remark that this form first appeared in 1846, and was known as *G. Fyfiana*. The original cross was not known, but was probably itself a hybrid between *G. speciosa alba maxima* and *G. cærulescens*. It has always been the aim of florists to convert "irregular" flowers (such as gloxinias, pansies, pelargoniums, &c.) into regular ones, which botanists regard as having been the primeval form from which irregular ones have been derived; but perhaps the effort is a doubtful advantage in the case of the gloxinia. Mr. Henslow advanced his theory of adaptation to account for the naturally irregular form of many flowers, viz. that where the lower petal in front is enlarged such enlargement has been due to the responsive power of the living protoplasm of the plant to meet the strain produced by the pressure of the insect upon it. But where the insect visitor alights only on the stamens of a flower, as in rhododendrons, amaryllis, veronica, horse chestnut, &c., then the lower front petal tends to be atrophied and is reduced in size or vanishes altogether, as in the horse chestnut. As an illustration of response to strain, if a weight be attached to a growing stem, just insufficient to break it, the

stem soon acquires sufficient strength to support a very much greater weight than it could have borne if it had been left to grow naturally. When irregular flowers become regular under cultivation, it is therefore apparently due to the continual absence of irritation set up by the insects of the country of which the flower in question is a native. It then *reverts* to the ancestral regular form. Such reversions may also be seen in *terminal* flowers, as of the spikes of larkspurs, foxgloves, horse chestnuts, &c., as irregular flowers are always more or less vertical, and mostly closely applied to a stem, so that insects are compelled to visit them from the front, and to rest on the lower petal, or else on the stamens.

Mr. Veitch's display of rhododendrons afforded a subject for remarks on crossing and doubling. His well-known and beautiful "greenhouse" forms were raised by hybridising about half a dozen species from the East Indies. The double or "*Balsamæ-flora*" section is especially interesting, as having been derived by his pollinating one particular flower, which had a single subpetaloid anther, with the pollen of the stamens in the same flower. This illustrates the fact that it is impossible to make a double flower unless nature first puts in an appearance, so to say, upon which the florist can then work. The exact external conditions under which "doubling" arises are not known.

Chrysanthemums afforded an opportunity of remarking upon the immense changes which the florists have been enabled to effect since the earliest examples reached England from Japan, in the first three decades of this century. The "actiniform" and "dragon's-mouthed" forms were introduced by Mr. Fortune in 1840. Mr. Henslow explained how the modifications in the structure of the corollas are produced, giving rise to the astonishing variety now existing among the flowers of this plant.

Cyclamen illustrated the peculiarity of certain plants in burying their pods. In the case of *Trifolium subterraneum* Mr. Darwin showed that the fruit was capable of absorbing nitrogenous matters from the soil by means of hairs. It is inferred, therefore, that cyclamen may do the same. This suggested that experiments should be made to see if the seeds of the cyclamen proved to be of a better quality if the pods were artificially covered and nourished by means of salts, &c., in the soil.

Cephalotus compared with nepenthes illustrated the wonder-

ful power of nature to make very similar structures for effecting the same purpose, viz. to catch insects, out of totally different materials; for while the pitchers of *sarracenia* and *cephalotus* were metamorphosed leaves, that of *nepenthes* was, according to Sir J. D. Hooker, a metamorphosed water gland situated at the apex of the leaf-blade. As a further illustration of the difference in origin of two similar structures, the tendril of the pea consisted of metamorphosed leaflets, while those of the vine and the Virginia creeper were made of flower stalks devoid of blossoms.

A few remarks on the structure of apples, pears, and medlars showed that these so-called fruits are mainly composed of fleshy stem and bases of the sepals welded on to the carpels; the outer skin of the latter and the inner one of the former being undeveloped, the internal tissues of both became confluent and hypertrophied, thus constituting the edible part, the core being only the inner skin of the carpels.

EXTRACTS FROM THE PROCEEDINGS

OF THE

ROYAL HORTICULTURAL SOCIETY.

GENERAL MEETING.

JANUARY 14, 1896.

[Rev. GEORGE HENSLOW, M.A., in the Chair.

Fellows elected (42).—W. H. Askew, Alfred Austin, Arthur Baker, Alfred Barker, A. Bateman, Duke of Bedford, Arthur Boulton, A. E. Brooke-Hunt, Rev. G. R. Browne, Mrs. F. Caddy, Chas. Clarke, Wilson Crewdson, W. H. Davis, Seymour Deadman, R. W. Green, Sir Robert Gresley, Bart., Frank Herring, George Hodgson, Edward D. Hoyland, William S. Iles, C. E. Keyser, L. E. Lambourn, H. Langston, Fred Lee, Sir Alex. Monerieff, F.R.S., Mrs. Nisbett, A. W. P. Pike, Miss Fanny A. Pirie, Henry Pitt, C. B. Powell, Walter Price, F. Randolph-Symmons, Edwin J. Sanger, Edwin Colby Sharpin, H. W. Simmons, H. Staples, David Tod, Arthur Veitch, Sir Edmund Verney, Bart., J. C. Waltham, Charles E. West, Mrs. H. Witham.

Associates (4).—D. R. Carter, W. H. Morter, Z. Novik, William Peters.

ANNUAL GENERAL MEETING.

117 VICTORIA STREET, WESTMINSTER, S.W.

FEBRUARY 11, 1896.

Sir TREVOR LAWRENCE, Bart. (President of the Society), in the Chair, and about 200 Fellows present.

The Minutes of the last Annual General Meeting on February 12, 1895, were read and signed.

The following elections took place :—

Fellows (47).—George Abbey, Jun., Miss E. Argles, James Barnshaw, F. C. Bause, Mrs. T. Berry, B. G. Berry, James S. Bird, Miss Bolton, F. W. Capp, Walter Child, W. A. Clark, D. B. Crane, James Crispin, Jun., Geo. Cuthbert, Dowager Lady Davis, Herbert Druce, Adam Duncan, Rev. J. C. B. Fletcher, M.A., James Scott Gordon, William Gunner, J. Hodges, Capt. Charles Hooper, D. Ingamells, Frederick N. Ingamells (Australia), Robt. Lebaudy, Lancelot Linley-Cowan (Australia), Mrs. Charles Lucena, W. F. Manning, H. Joseph Parks, E. Poole, E. W. Potter, Wm. Salcombe, John Robert Saw, A. W. Shelliker, H. J. Sheppard, Mrs. H. F. Sich, Basil Woodd Smith, G. H. Smith, H. Frank Tagg, Mrs. Lydia Turner, Francis Wm. Vallis, George Walker, A. Warburton, Percy Waterer, Mrs. E. Watson, A. Wells-Ingram, Godfrey Woodstock.

Society affiliated (1).—Bedfordshire Horticultural Improvement Association.

Before beginning the formal business of the meeting, the PRESIDENT said he believed it would be in accordance with the feelings of the entire community, and certainly of the Fellows of the Royal Horticultural Society (having regard to the fact that Her Most Gracious Majesty was Patron), that they should offer to the Queen, with the utmost respect, an address of sympathy at the grievous loss which had befallen her in the death of Prince Henry of Battenberg. The meeting signified unanimous consent.

Messrs. Arthur W. Sutton and W. Goldring were appointed scrutineers of the ballot.

A hearty vote of thanks was accorded to the retiring members of Council, viz.:—Sir John Edwards Moss, Bart., Mr. Owen Thomas, and Mr. Henry Williams.

To fill the vacancies thus caused, the following gentlemen were proposed, viz.:—The Rev. G. H. Engleheart, M.A., Thomas Gabriel, Esq., and R. McLachlan, Esq., F.R.S.

The PRESIDENT, in moving the adoption of the report of the Council and balance-sheet, which had been sent to every Fellow of the Society in January, said he only intended touching briefly on a few points. The Council had circulated a new "Code of Judging Rules," which it was considered would be of assistance to judges and exhibitors at horticultural shows. The "Code"

was not considered to be anything more than a beginning, and they quite expected it would be subject to criticism. They would be glad to receive any suggestions towards the further improvement of the Code.

With respect to the retirement of Mr. Barron, he was expressing the sentiments of the whole of the Council when he said that they all fully recognised his invaluable services, which had extended over a great number of years. During a disastrous period in the Society's history Mr. Barron's assistance and advice had been invaluable.

Mr. S. T. Wright had been appointed superintendent at Chiswick Gardens ; he had come there with an excellent reputation, and the Council thought it only fair that he should be allowed a free hand. They were anxious that the experiments should be carried on, and that Chiswick should be made a model horticultural establishment.

The Society's shows had been very successful, the only drawback being that Her Royal Highness the Princess of Wales was unable to be present at the opening of the Temple Show, while they were similarly disappointed at the Crystal Palace Fruit Show in the unavoidable absence of the late Lord Mayor. The meetings held at the Drill Hall had been well supported, and the attendance had been larger than before. The Vegetable Show at Chiswick was a disappointment, and he regretted to say that vegetables, from an exhibition point of view, did not receive the attention they deserved.

Sir TREVOR also spoke highly of the value of the services of the Scientific Committee, and the character and punctuality of the Society's *Journal*, which still continued to give great satisfaction.

It was satisfactory to note that seventy-two provincial societies had been affiliated, and the number was still increasing. Some suggestions had been made, continued Sir Trevor, to make the Society still more provincial, but it was a step that required much consideration. The disastrous experience at Liverpool assured them that provincial shows did not pay ; the Council, however, had made arrangements to send deputations to the exhibitions to be held at York and Chester during the forthcoming summer.

The PRESIDENT concluded by referring to the criticism to

which the Council had recently been subjected, adding that he was not sorry that such had been the case, as it showed the Fellows of the Society were taking a lively interest in the Society. The Council claimed no exemption from liability to err, but figures proved that it had of late worked for the welfare of the Society, as previous to 1889 each year there had been a deficiency, whereas since that date there has annually been a balance in hand, while the number of Fellows and the circulation of the *Journal* had increased correspondingly. He thought this was sufficient to prove the Council had done something for the good of the Society, and he hoped to give a satisfactory answer to any questions that might be asked prior to moving the adoption of the report.

Mr. PARKER seconded the adoption of the report, and said, in regard to the *Journal*, the end of the current year would complete twenty volumes, and he hoped they would publish a complete index of the whole, as he felt sure it would be very useful, and save much trouble when referring to the information contained therein.

Mr. A. H. SMEE said he regretted to be compelled to move an amendment to the resolution. He generally felt it his duty to support the executive, and he believed the Council had endeavoured to do their best for the Society; but he thought there were times when they deviated a little from their powers. He said the Council had acted *ultra vires* in granting a retiring allowance to Mr. Barron. It should be remembered that the Society was a voluntary society, and if any accident happened to it, he took it that the Fellows would be responsible for the pension. The report stated that Mr. Barron had had conferred upon him an Honorary Life Fellowship of the Society, but no such Fellowship was, as far as he could discover, mentioned in their charter. If they had elected Mr. Barron an ordinary Fellow he would have come under Rule 90, and under that rule it would have been impossible for the Council to have conferred a pension upon him. He did not accuse the Council of wilfully doing wrong, but they were bound by their charter. Before bringing the matter forward he had taken the advice of counsel; and his amendment was as follows:—

“An allegation having been made by a Fellow that the Council may have acted *ultra vires* to its charter and the bye-

laws by electing Mr. Barron to a Life Fellowship, and that the form of ballot-paper and mode of election and removal of members of the Council is irregular, and a doubt is expressed that the meeting is incapable to deal with the allegations, it is expedient that a committee of seven Fellows shall be appointed to investigate and report on these allegations, and they be empowered to obtain legal advice on the subject and to report to an adjournment of this meeting."

Mr. Smee added that he would, if desired, hand his "counsel's opinion" to the Council.

The PRESIDENT said they could not accept any such proposal as that contained in the amendment. The Council had acted in accordance with the custom that had been pursued ever since he had had the honour of being connected with the Society, and he believed it would be a total waste of the time of the seven members who might be appointed to the Committee, and of the money which he supposed the Society would have to pay for counsel's advice. He sincerely trusted the meeting would, in the interest and welfare of the Society, give an emphatic negative to the amendment.

The amendment having been seconded by Mr. Peter Barr, it was put to the meeting, when only three voted for it. I was thus lost by an overwhelming majority.

Mr. PETER BARR asked several questions in regard to the Secretary's salary and duties, and received satisfactory replies from the Chairman.

Mr. MARSHALL enquired what was to be done at Chiswick, to which the reply was made that for the first year at least a free hand would be allowed to the new superintendent.

Mr. R. DEAN said he noticed that there would be no meeting of the Floral Committee between an early date in September and the beginning of October. He thought there should be a meeting sooner.

The PRESIDENT promised that the matter should not be lost sight of. He then formally moved the adoption of the Council's report as printed below. The motion was carried.

REPORT OF THE COUNCIL FOR THE YEAR 1895-96.

The most important work of the Society during the past year, and that which will have the greatest effect on the Gardening of the future, is probably the recent publication of the Rules and Suggestions for Judges and Schedule makers.

In response to a widely-expressed wish the Council in the autumn of 1894 appointed a Committee to draw up such a Code of Rules, and it is not saying too much to affirm that no Committee has (of late years at least) worked harder or devoted more time to the Society's interests. The most hearty thanks of the Society are due to the members of this Committee.

Although actual experience and practice may at first call for divers modifications and additions, yet the result of their labour, as now set forth, is one which the Fellows of the Society may well regard with satisfaction, and which will, it is hoped, form the foundation of a Code by which all Judging at Shows will be conducted in years not far distant. The Code is published at the Society's office, 117 Victoria Street, S.W., post free, 1s. 1*d*.

The year has also been marked by the retirement of Mr. Barron from his long tenure of office as Superintendent of the Society's Gardens at Chiswick—a tenure of thirty years as Superintendent, and eight years as Foreman—reaching from the year 1857 to the present time. During those thirty-eight years Mr. Barron has devoted his best energies and the most valuable years of his life to the service of the Society, and after due consideration the Council have thought it right to make him a retiring allowance of two-thirds of his salary, and have conferred upon him an Honorary Life Fellowship in the Society.

The Council desire on their own behalf, and that of the Fellows generally, to tender to Mr. Barron their fullest acknowledgment of his faithful and valuable services during the many years of his work for the Society, accompanied with the hope that he may long enjoy a well-earned retirement.

In round numbers £1,765 has been expended at Chiswick this year on the general work and repairs and keeping up of the Gardens. The receipts from the Gardens by sale of surplus produce amount to £367, making the net cost of the Gardens £1,398.

Mr. S. T. Wright, hitherto of Glewston Court Gardens, Ross, has been appointed Superintendent.

The Council have thought that for the first year at least it would be best for Mr. Wright to have a perfectly free hand at Chiswick, subject to the control of the Council alone. Whilst therefore expressing their best thanks to the members of the late Chiswick Board, they have decided not to propose the re-appointment of that body for the ensuing year.

Certain alterations which they hope to be able to introduce into the system at Chiswick will develop themselves as time goes on. It would not be wise to put forth an ambitious programme until Mr. Wright shall at least have had time to become intimately acquainted with the Garden, its capabilities, and its contents. All practical Gardeners will at once perceive the necessity of allowing 1896 to be a year of what it is hoped may prove unpretentious advance and improvement.

Eighteen Fruit and Floral Meetings have been held in the Drill Hall, James Street, Victoria Street, Westminster, besides the more extended shows at the Temple Gardens on May 21, 22, and 23; at Chiswick Gardens on September 10; and at the Crystal Palace on September 26, 27, and 28; and lectures have been delivered at fifteen of the meetings, exclusive of those given at the Conferences. The number of awards has been as follows:—On the recommendation of the Floral Committee, 22 First Class Certificates against 71 in 1894, 174 Awards of Merit against 225, and no Botanical Certificates against 3. On the recommendation of the Orchid Committee, 48 First Class Certificates against 68 last year, 98 Awards of Merit against 134, 72 Botanical Certificates against 21. On the recommendation of the Fruit and Vegetable Committee, 8 First Class Certificates against 15, and 44 Awards of Merit against 12 last year.

For the simplification of office arrangements and for economy in postage expenses, it has been thought well in future to make the Society's year of work begin and end (as far as allowed by the Charter) with the Annual Meeting in February. For this purpose all Fellows' tickets for 1896 will be available for the January meeting of 1897. The Committees recently appointed will also continue in office until the same date.

At the request of several amateur growers a Narcissus Committee has been re-established.

The Council have also thought it well to make an attempt to encourage individual research and effort in obtaining new plants either by importation or hybridisation, and to this end are offering the Society's medals as prizes, particulars of which will be found in the Schedule of Arrangements, 1896.

The Council desire to draw the attention of all Fellows of the Society to the more extended use which the Scientific Committee might be to them if they availed themselves more freely of their privileges in submitting instances of diseases of or injuries to plants, caused by insects or otherwise. The Scientific Committee is composed of gentlemen qualified to give the best advice on all such subjects, either in respect to the prevention or cure of disease. The Committee is also glad to receive specimens of malformation or other subjects of horticultural or botanical interest.

The Council wish to express their thanks to the Director of the Royal Gardens, Kew, for allowing them to consult Mr. Massee, F.L.S., on the fungoid diseases, &c., brought before the Scientific Committee, and to that gentleman for his readiness in giving them the advantage of his knowledge and advice.

The Society's Great Show held (by the continued kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was as successful as ever, and it is a matter of satisfaction to the Council to find that this meeting is now universally acknowledged to be the leading horticultural exhibition of this country. The best thanks of the Society are due to all who kindly brought their plants for exhibition, or otherwise contributed to the success of this show.

The Exhibition of Vegetables held in the Society's Gardens at Chiswick on September 10 was hardly of such practical utility as the Council had anticipated. Wonderful specimens of cultivation were shown, but many of the exhibits were distinctly too large for table use, and the number of exhibitors was comparatively small. It is hoped that whenever another Vegetable Show may be held this meeting may at least have taught us what to aim at and what to avoid.

The great show of British-grown Fruit held by the Society at the Crystal Palace on September 26, 27, and 28, was of even greater dimensions and excellence as regards the fruit shown, and was attended by a far larger number of visitors than that of

last year. It is needless to enter into details, as full particulars will be found in Volume XIX., Part 2, of the *Journal* recently issued.

As an object-lesson in British fruit cultivation this Annual Show stands out unrivalled, and is of national importance. But its continuance year after year is a matter of the gravest concern to the Council, as it involves a large expenditure without hope of any return. Arrangements have been made with the Crystal Palace authorities for the Society to hold a similar show on October 1, 2, and 3, 1896, but these arrangements are absolutely conditional on a sum of £100 being subscribed by April 1896 to assist with the Prize Fund.

Messrs. H. J. Veitch, T. Francis Rivers, George Bunyard, Owen Thomas, Geo. Norman (of Mentmore), Philip Crowley, John Wright, and the Rev. W. Wilks have been appointed a committee to revise the schedule of prizes, and a circular letter inviting subscriptions has been issued, but as it is impossible to send it to all, it is hoped that any who are willing to assist in the continuance of this show will send their subscriptions to the Secretary, 117 Victoria Street, S.W.

The *Journal* of the Society has been continued so as to enable Fellows at a distance to enter more fully into and reap the benefits of the study and work of those actively engaged at headquarters. Vol. XVII., Parts 3 and 4, Vol. XVIII., and Parts 1 and 2 of Vol. XIX. were issued during the year, and Vol. XIX., Part 3, is now almost ready for issue.

An examination in the principles and practice of Horticulture was held on May 1, concurrently in different parts of the United Kingdom, a centre being established wherever a magistrate or clergyman, or schoolmaster, or other responsible person accustomed to examinations would consent to superintend one on the Society's behalf, and in accordance with the rules laid down for its conduct. No limit as to the age, position, or previous training of the candidates was imposed, and the examination was open to both sexes. One hundred and sixty-nine candidates presented themselves for examination, and were divided into three classes. Twelve of the candidates gained 200 marks and more out of a possible 300 in the first class; thirty-seven gained between 150 and 200 marks in the second class; seventy-three gained between 100 and 150 marks in the third class; and forty-seven having

failed to obtain 100 marks were not classed. The names and addresses of the successful candidates, together with the number of marks assigned to each, will be found in the Society's *Journal*, Vol. XIX., Part 1, 1895, page 1.

It is proposed to hold a similar examination on Wednesday, May 6, 1896, and candidates intending to sit for it should apply to the Secretary, 117 Victoria Street, Westminster, during March.

Acting in conjunction with the Lindley Trustees, the Council have devoted considerable attention to the Library. All serial publications have been kept up to date, a large number of valuable volumes have been bound, and the following new books, amongst others, added to the Library, viz.: Sargent's "Forest Flora of Japan," M. C. Cooke's "Introduction to the Study of Fungi," Miller's "Figures of Plants," Edwards' "Exotic and British Flowers," "Flore de l'île de la Réunion," "Flore de l'Algérie," Miss Amherst's "History of Gardening," &c.

A sum of £120 has been received for the Catalogue Fund, which was started in 1894, and the MS. for the Catalogue is almost ready for the press.

The hearty thanks of the Society are due to the Chiswick Board and to all the members of the Standing Committees—viz., the Scientific, the Fruit and Vegetable, the Floral, and the Orchid Committees, for the kind and patient attention which they have severally given to their departments.

The best thanks of the Society are also due to all those who, either at home or abroad, have so kindly and liberally presented books to the Library or plants or seeds to the Gardens. A list of the donors has been prepared, and will be found in the Society's *Journal*, Vol. XIX., Part 3, 1896.

The Council wish to express in their own name and in that of all Fellows of the Society, their great indebtedness to all who have so kindly contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by the reading of papers, to the success of the fortnightly meetings in the Drill Hall.

The papers read at these meetings, which have been, or will shortly be, published in the *Journal*,* are as follows :—

* Several back numbers of the *Journal* can still be purchased at reduced prices. For List, see "Arrangements, 1896," page 14.

- Mar. 12. "The Diseases of Tomatos and Vines," by Mr. Collenette.
- „ 26. "Lifting Large Trees and Shrubs," by Mr. T. H. Crasp.
- April 9. "Campanulas from a Garden Point of View," by Mr. J. Wood.
- „ 23. "New Primulas," by Mr. J. G. Baker, F.R.S.
- „ „ "Culture and Classification of Primulas," by Mr. H. Selfe-Leonard.
- „ „ "The Auricula," by Mr. James Douglas.
- May 14. "Plants and Gardens of the Canary Islands," by Dr. Morris, C.M.G., &c.
- June 11. "Rose Culture under Glass," by Mr. Frank Cant.
- July 9. "Etiolation as a Phenomenon of Adaptation," by Mr. Francis Darwin.
- „ 23. "The Carnation in Scotland," by Mr. R. P. Brotherston.
- Aug. 13. "Hardy Bamboos," by Mr. A. B. Freeman-Mitford.
- „ 27. "Crotons and Dracænas," by Mr. C. F. Bause.
- Oct. 15. "Nut Culture in England," by Mr. S. Omer Cooper.
- „ 29. "Potatos," by Mr. A. W. Sutton.
- Nov. 12. "Substitutes for Larch," by Dr. Maxwell T. Masters, F.R.S., &c.
- „ 26. "Asparagus Culture," by Mr. James Mason.

The Council have the sad duty of recording the death of 40 Fellows during the year, and amongst them they regret to find the names of Lord Aberdare, Dowager Duchess of Buccleuch, Thomas Baines, Thomas G. Barclay, C. F. Bause, Lady Clarke, James Crispin, Robert Houlgrave, Prof. Huxley, C. T. Lucas, G. D. Owen, Charles B. Phillimore, Henry D. Pochin, George Taber, T. R. Watt, John C. Wicks, and John Wills.

The following Table will show the Society's progress in regard to numerical strength during the past year :—

DEATHS IN 1894.				FELLOWS ELECTED 1894.			
		£	s. d.			£	s. d.
Life Fellows	7.....	0	0 0	4 Guineas	2.....	8	8 0
4 Guineas	2.....	8	8 0	2 „	56.....	117	12 0
2 „	15.....	31	10 0	1 „	231.....	242	11 0
1 „	16.....	16	16 0	Associates.....	4.....	2	2 0
				Affiliated Societies	14.....	16	16 0
	40	£56	14 0	Fellows commuted	8... }		
				= £178. 10s.	... }		
						315	£387 9 0
				Deduct Loss		196	7 0
RESIGNATIONS.				Net increase in Income £191 2 0			
		£	s. d.				
4 Guineas	2.....	8	8 0				
2 „	33.....	69	6 0	New Fellows, &c.		315	
1 „	59.....	61	19 0	Deduct Resignations and			
				Deaths.....			134
	94	£139	13 0				
Total Loss	134	£196	7 0	Numerical increase		181	

A scheme for the Affiliation of Local Horticultural Societies was put forward in 1890, and 79 Local Societies have availed themselves of it. The Council express the hope that Fellows will promote the affiliation of Local Horticultural and Cottage Garden Societies in their own immediate neighbourhood.

Subjoined is the usual Balance Sheet, with the Revenue and Expenditure Account for the year ending December 31, 1895.

	£	s.	d.
To SUNDY CREDITORS	50	1	9
" SUBSCRIPTIONS, 1896, paid in advance	76	18	0
" LIFE COMPOSITIONS	246	15	0
" GENERAL REVENUE ACCOUNT—			
Balance, 1st January, 1895 ...	3,051	6	4
Less Bad Debts	2	3	0
	3,049	3	4

Balance for the year 1895, as per
Revenue and Expenditure Account 564 1 3

	3,613	4	7
	£3,986	19	4

	£	s.	d.
By SUNDRY DEBTORS—			
Annual Subscriptions outstanding, estimated at	20	0	0
Garden Produce, Adverts., &c. ...	120	3	10
Rates and Taxes (Chiswick) paid in advance	34	9	1
	174	12	11

" INVESTMENTS—

$2\frac{3}{4}$ % Consols, £2,122. 8s. 9d. cost 1,892 11 3
(£2,022. 8s. 9d. of this sum is held by the Society subject to the provisions of the will of the late J. Davis, Esq.)

$2\frac{3}{4}$ % Consols, £1,750 ... cost 1,768 5 0

3,660 16 3

" CASH AT LONDON AND COUNTY BANK—

On Current Account ... 146 15 10

" CASH IN HAND—

Head Office ... 4 4 3

Chiswick ... 0 10 1

151 10 2
£3,986 19 4

We have examined the above Accounts, and find the same correct.

(Signed)

HARRY TURNER, } Auditors.
JAMES H. VEITCH, }

January 7, 1896.

HARPER BROS., Chartered Accountants.

ROYAL HORTICUL

Fr.

ANNUAL REVENUE AND EXPENDITURE

				£	s.	d.	£	s.	d.
To ESTABLISHMENT EXPENSES—									
Salaries and Wages	...	...	...	644	14	0			
Rent of Office	...	...	...	173	3	0			
Printing and Stationery	...	...	...	203	4	5			
Journal	...	...	...	672	14	11			
Postage	...	...	...	77	11	6			
Coal and Gas	...	...	...	4	16	9			
Donation to Auricula and Primula Society				10	0	0			
Miscellaneous	...	...	...	150	15	10			
							1,937	0	5
„ SHOWS and MEETINGS—									
Rent of Drill Hall and Cleaning	...	...	...	97	19	0			
Temple Show	...	...	...	622	11	9			
Crystal Palace Fruit Show	...	...	...	229	18	7			
Prizes and Medals—									
Vegetable Show	...	...	...	54	4	0			
Rose Show	...	...	...	40	5	0			
Others	...	...	...	146	18	10			
Printing, &c.	...	...	...	4	4	0			
Labour	...	...	...	87	6	11			
Repairs to Tents, &c.	...	...	...	39	0	5			
Superintendent of Flower Shows	...	...	...	50	0	0			
							1,372	8	6
„ CHISWICK GARDENS—									
Rent, Rates, Taxes, and Insurance	...	...	...	306	8	8			
Superintendent's Salary	...	...	...	225	0	0			
Labour	...	...	...	713	14	5			
Implements, Manure, Soil, Packing, &c.	...	...	...	121	7	11			
Coal and Coke	...	...	...	213	13	9			
Repairs, Ordinary	...	...	...	96	16	8			
Water and Gas	...	...	...	22	19	11			
Miscellaneous	...	...	...	64	10	8			
							1,764	12	0
„ BALANCE TO GENERAL REVENUE									
ACCOUNT	...	...	...				564	1	3
							£5,638	2	2

TURAL SOCIETY.

ACCOUNT for the YEAR ending DECEMBER 31, 1895. Cr.

	£	s.	d.	£	s.	d.
By ANNUAL SUBSCRIPTIONS				3,354	19	5
„ TEMPLE SHOW	1,241	19	9			
„ CRYSTAL PALACE FRUIT SHOW ...	205	4	0			
„ DRILL HALL MEETINGS	27	14	0			
				1,474	17	9
„ ADVERTISEMENTS IN JOURNAL, &c.				209	8	7
„ SALE OF JOURNAL				52	15	10
„ MISCELLANEOUS RECEIPTS ...				39	5	10
„ DIVIDENDS—						
Davis Bequest and Parry's Legacy	56	18	4			
Consols, £1,750	41	1	0			
				97	19	4
Interest on Deposits... ..				3	12	3
„ PRIZES AND MEDALS				38	8	1
„ CHISWICK GARDENS—						
Produce sold	339	0	1			
Admissions	3	0	0			
Miscellaneous	24	15	0			
				366	15	1

£5,638 2 2

We have examined the above Accounts, and find the same correct.

(Signed) HARRY TURNER, } Auditors.
JAMES H. VEITCH, }

HARPER BROS., Chartered Accountants.

January 7, 1896.

GENERAL MEETING.

MARCH 10, 1896.

Mr. HORACE F. COX in the Chair.

Fellows elected (41).—S. R. Andrews, Mrs. S. Arnold, Rev. E. Bartrum, Rev. M. C. H. Bird, M.A., Samuel Buston, John O. Clarke, R. Creighton, Lady Davey, Mrs. G. Daw, John Dewrance, H. Percy Dodson, Dr. H. W. Drew, B. H. Emerson, Miss Emma Ford, Miss Lucy Ford, C. W. Gale, W. Gurley, Lady Hall (of Dunglass), Miss Hazeon, Mrs. W. Holborn, G. P. Mitchell Innes, R. Jones, J. Kitley, J. Curtis Leman, R. Baillee MacBean, Reginald MacLeod, Martin J. Meyerotte, Hon. Richard Moreton, A. J. Blackett Ord, J.P., C. Stanley Peach, Basil Richardson, Hon. Mrs. John Ryder, G. R. Sheath, Rev. T. N. Hart Smith, Herbert William Symes, William Tapply, T. Turton, Charles H. Wainwright, Mrs. E. Westray, Edw. Withers, Charles Wood.

Associates (2).—Mr. Frank Briggs, William Truelove.

Societies affiliated (6).—Aspley Guise Horticultural Society; Bournemouth Horticultural Society; King's Lynn Horticultural Society; Norfolk and Norwich Horticultural Society; Sea Point Horticultural Society; Withington Horticultural Society.

A paper on "The Melon" was read by Mr. James Barkham. (See page 1.)

GENERAL MEETING.

MARCH 24, 1896.

Mr. GEORGE GORDON in the Chair.

Fellows elected (18).—Miss Ethel Biggs, R. Stafford Charles, Mrs. Akers Douglas, Arthur F. Fitter, A. Helsam Jones, T. W. Howard, Austen Keen, Arthur Kime, T. M. Le Pelly, Alfred Lodge, G. H. Rolls, Alfred R. O. Stutfield, Hon. Mrs. Tremayne, John C. Tremayne, Arthur F. Varley, Vyell E. Walker, Charles Wallington, J. H. Wigginton.

Societies affiliated (2).—Dartmouth and District Horticultural Society; Preston Horticultural Society.

A paper on "Summer Saladings" by Mr. W. Iggulden was read in his absence by the Assistant Secretary. (See page 8.)

GENERAL MEETING.

APRIL 7, 1896.

Mr. GEORGE BUNYARD in the Chair.

Fellows elected (17).—Hon. Mrs. Alfred Acland, George Bick, Rev. W. J. Burdett, Alfred P. Coe, Lady Digby, Mrs. T. B. Elliott, A. B. Freeman Mitford, J. M. Hawes, R. A. Hellaby, Mrs. C. L. Lewis, Mrs. Raymond Lluellyn, Miss Rudduck, Miss Murray Schmitz, Arthur Snell, George Soltan-Symons, Robert J. J. Stewart, John W. Townsend.

GENERAL MEETING.

APRIL 21, 1896.

Mr. JOHN H. FISHER in the Chair.

Fellows elected (16).—Thomas Robins Bolitho, Major Borrowes, Robert Godwin Cheesley, George William Cook, Mrs. E. H. Drinkwater, Dr. Richard Freer, M.A., James Furness, Herbert E. Hall, James Ingle, G. W. Law-Shofield, Charles R. Paul, Frank A. Rehder, Miss S. M. Sneyd, Arthur G. C. Stollery, John Strong, M. D. Warmington.

A paper on "Pine-apples" by Mr. H. W. Ward was read by the Assistant Secretary. (*See* page 16.)

GENERAL MEETING.

MAY 5, 1896.

Rev. GEORGE HENSLOW, M.A., in the Chair.

Fellows elected (19).—Mrs. Ingham Baker, John Charrington, Henry F. Elliott, Victor Norman Gauntlett, Mrs. Alfred Goldsmid, Joseph Groves, Henry Hicks, Alfred H. Houlder, C. Grey Mott, W. H. Page, Mrs. Parris, Edw. Rawlings, T. Molesworth Roberts, Charles S. Robinson, Mrs. Stansfeld, W. Titt, Miss Laura Warwick, H. H. Williams, H. H. Wills.

Society affiliated (1).—Yorkshire Grand Gala and Musical Exhibition.

A short Lecture on "The Species and Varieties of Tulipa" was given by Mr. J. G. Baker, F.R.S. (*See* page 24.)

THE TEMPLE SHOW, 1896.

MAY 19, 20, and 21.

By kind permission of the Treasurer and Masters of the Bench the Society held its Ninth Great Annual Flower Show in the gardens of the Inner Temple, on Tuesday, Wednesday, and Thursday, May 19, 20, and 21, 1896.

The weather during the first day was glorious, and visitors came in far larger numbers than on any preceding occasion.

About 5 P.M. on the first day their Royal Highnesses the Prince and Princess of Wales, accompanied by the Princesses Maud and Victoria, and Prince Carl of Denmark, honoured the Society by visiting the show unannounced. The Royal party looked through all the tents, and then spent half an hour or so chatting on the lawn.

The second day was in comparison quite cold and squally. Indeed, the wind was at times so violent that the moorings of the tents—and especially those of the large marquee—were almost torn from the ground, necessitating the continuous driving in of holdfasts for the security alike of visitors and plants.

The exhibition itself was quite up to the average. It would be impossible to give details as to the plants, flowers, fruits, &c., shown, so vast was the quantity the tents contained, but the following ground plans will show their general disposition.

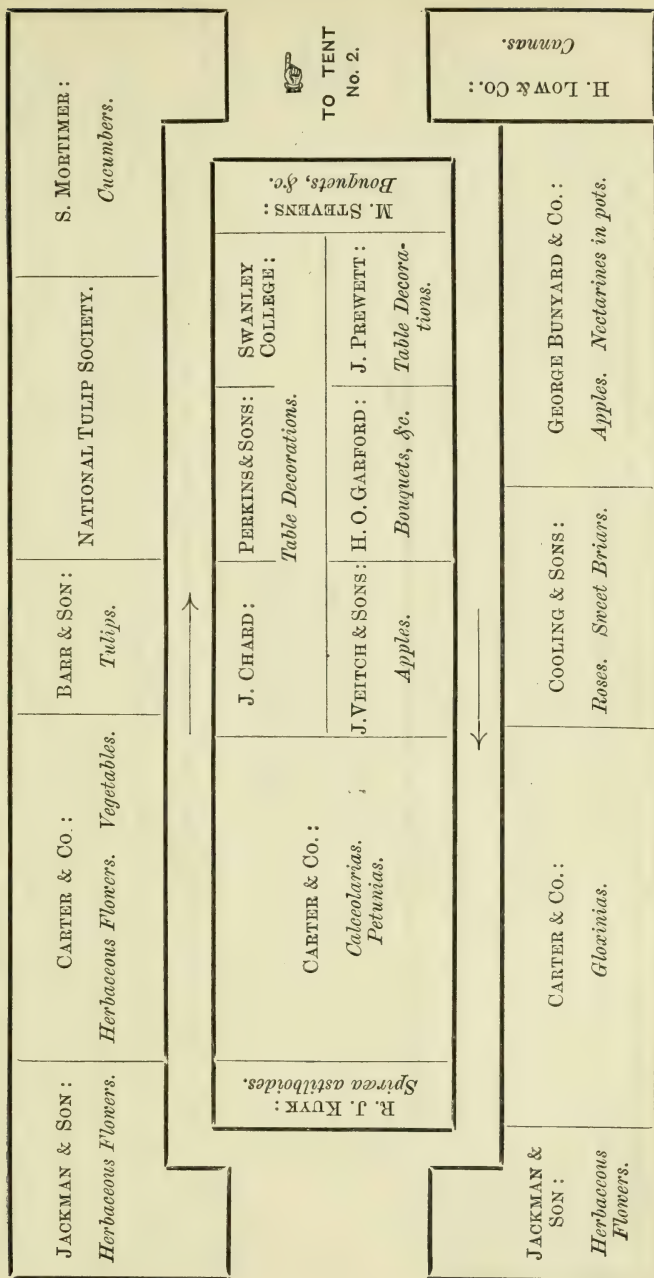
The awards of the Council are given below; those of the Fruit, Floral, and Orchid Committees will be found under the report of each Committee in their proper order.

The band of her Majesty's Horse Guards (Blues), under the direction of Mr. Chas. Godfrey, R.A.Mus., performed during the afternoon of each day.

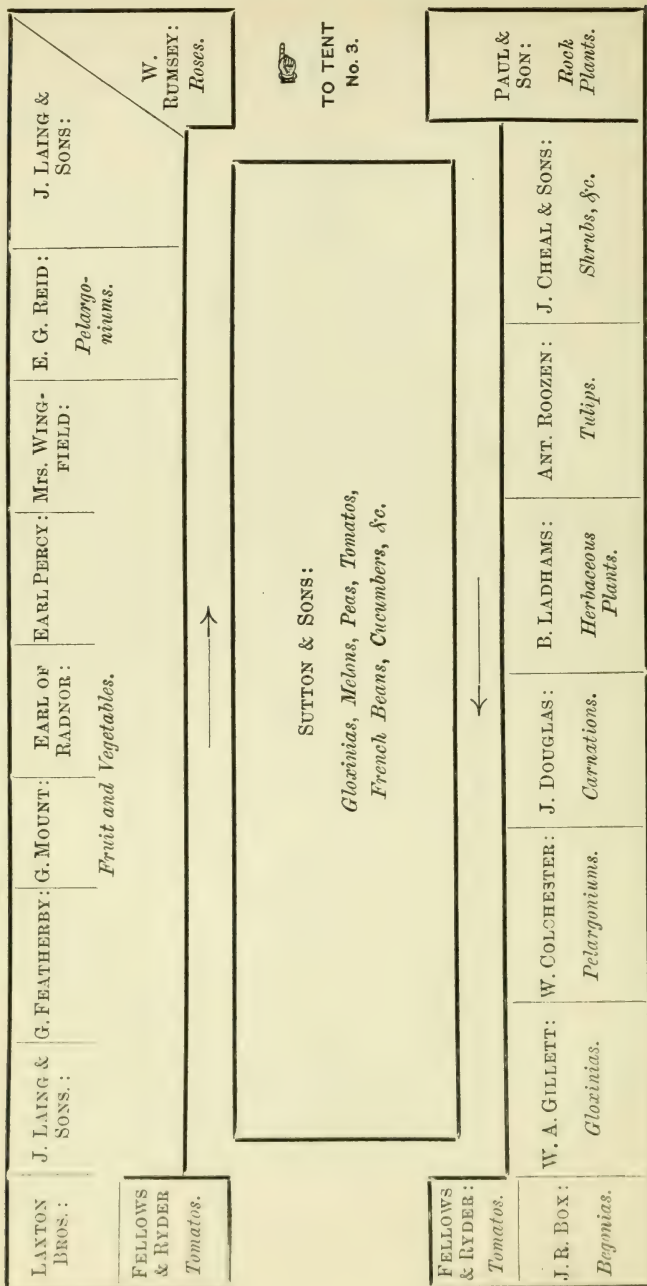
TEMPLE SHOW, 1896.—TENT No. 1.—PLAN 90' x 30'.

THE TEMPLE SHOW, 1896.

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


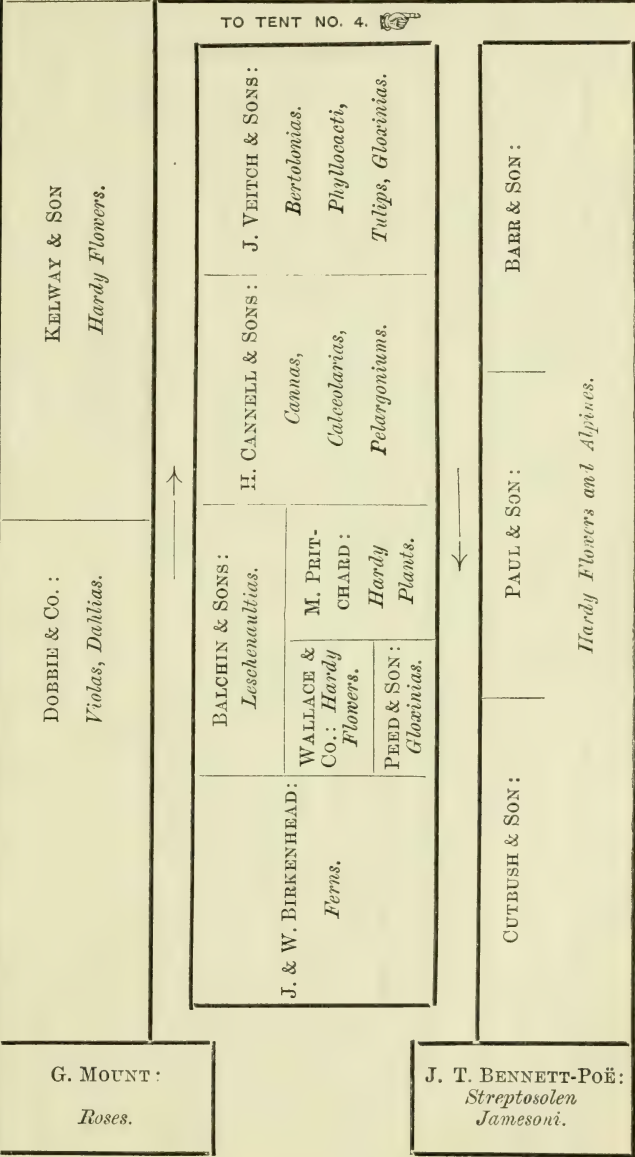
TEMPLE SHOW, 1896.—TENT No. 2.—PLAN 150' x 30'.



T. S. WARE:


Begonias and Herbaceous Plants.

TO TENT NO. 4. 




TEMPLE SHOW, 1896.—TENT NO. 4.—PLAN 140' x 40'.

FROMOW & SONS: <i>Lilies, Acers, &c.</i>	JAMES & SON: <i>Calceolarias.</i>	T. S. WARE: <i>Peonies, Tulips.</i>	JACKMAN & SON: <i>Roses.</i>	J. WATERER & SONS: <i>Acers, Rhododendrons.</i>	BACKHOUSE & SON: <i>Tropical Rockery.</i>	CRIPPS & SON: <i>Azaleas.</i>	T. S. BOULTON: <i>Pteris Boultoni</i>
↑							
SANDER & Co.: <i>New Plants.</i>		LINDEN: <i>Orchids.</i>	WILLIAMS & SON: <i>Clivias.</i>	MRS. WINGFIELD: <i>Orchids, &c.</i>	J. TASKER: <i>Cannas, Roses.</i>	M. S. COOKE: <i>Orchids.</i>	G. H. ROLLS: <i>Orchids.</i>
H. B. MAY: <i>Foliage Plants.</i>		H. LOW & Co.: <i>Orchids, Caladiums, &c.</i>		LEWIS & Co.: <i>Orchids.</i>		J. CYPHER: <i>Orchids.</i>	
←							
J. VEITCH & SONS: <i>Ferns, Callas, Arisemas.</i>	J. LAING & SONS: <i>Gloxinias, Streptocarpus.</i>		H. J. JONES: <i>Begonias.</i>		WALLACE & Co.: <i>Lilies.</i>		
						R. JENSEN: <i>Pelargoniums.</i>	
						BALCHIN & SON: <i>Leschen- aultias, &c.</i>	
						COOLINGS & SON: <i>Roses.</i>	

TO TENT NO. 5. 

CRIPPS & SON:
Acers.

TO TENT NO. 5. 

CHAS. TURNER :

Roses.

TEMPLE SHOW, 1896.—TENT NO. 5.—PLAN 160' × 60'.

CUTBUSH & SON : <i>Foliage Plants, Carnations, &c.</i>	W. RUMSEY : <i>Roses.</i>	R. SMITH & Co. <i>Clematis.</i>	RIVERS & SON : <i>Nectarines in pots.</i>	WM. PAUL & SON : <i>Roses.</i>
↑				
MARTIN R. SMITH : <i>Carnations.</i>				
B. S. WILLIAMS : <i>Orchids.</i>	CAMBRIDGE BOTANIC GARDEN : <i>Rare Plants.</i>	MAJOR JOICEY :	J. G. FOWLER : <i>Orchids.</i>	CHARLESWORTH & Co. :
SIR TREVOR LAWRENCE, Bart. :	W. S. ELLIS :	EARL PERCY :	SIR F. WIGAN : <i>Orchids.</i>	JULES HYE : H. S. LEON, M.P. :
↓				
W. ICETON : <i>Foliage Plants.</i>	H. J. JONES : <i>Pelargoniums.</i>	J. PEED & SONS : <i>Caladiums.</i>	LAING & SONS : <i>Caladiums.</i>	J. VEITCH & SONS : <i>Foliage Plants.</i>
			WILLS & SEGAR : <i>Aroids, Palms, &c.</i>	PAUL & SON : <i>Roses.</i>

AWARDS MADE BY THE COUNCIL AT THE TEMPLE SHOW, 1896.

NOTE.—Duplicate Medals are not given to Trade Exhibitors for flowers and plants exhibited under different heads, but the one award is made for the sum total. Distinct awards are, however, made for fruit, &c.

Gold Medal.

Sir Trevor Lawrence, Bart., for Orchids.

Messrs. Sander & Co., for Orchids.

Messrs. Sutton & Sons, for Vegetables.

Silver Cups.

1. Messrs. Rivers & Son, for Nectarines.
2. H. S. Leon, Esq., for Orchids.
3. Sir F. Wigan, for Orchids.
4. Messrs. J. Veitch & Sons, for new plants, Azaleas, Caladiums, Gloxinias, Japanese plants, &c.
5. Messrs. Cutbush & Son, for Carnations, cut-flowers, &c.
6. Messrs. Low & Co., for Orchids, Cannas, &c.
7. Messrs. Charlesworth & Co., for Orchids.
8. W. S. Ellis, Esq., for Orchids.
9. Messrs. Backhouse & Son, for Alpines and Orchids.
10. Mr. Chas. Turner, for Roses, Carnations, &c.
11. Messrs. W. Paul & Son, for Roses.
12. Earl Percy, for Fruit and Vegetables.
13. Messrs. Wingfield, for Vegetables and Fruit.
14. Mr. George Mount, for Roses.
15. Messrs. Paul & Son, for Roses, Herbaceous plants, &c.
16. Messrs. R. Smith & Co., for Clematis.
17. Messrs. Peed & Son, for Caladiums.
18. Messrs. W. & J. Birkenhead, for Ferns.
19. Messrs. Bunyard & Co., for Apples.

Silver Gilt Flora Medal.

Mr. Jas. Cypher, for Orchids.

Messrs. Barr & Son, for Herbaceous plants, &c.

J. G. Fowler, Esq., for Orchids.

Major Joicey, for Orchids.

Earl Percy, for Orchids.

Martin R. Smith, Esq., for Carnations.

Mr. M. Pritchard, for Herbaceous plants.

Messrs. W. Balchin & Son, for Leschenaultias, &c.

Mr. T. S. Ware, for Herbaceous plants and Begonias.

Messrs. J. Waterer & Sons, for Rhododendrons.

Messrs. Wills & Segar, for Foliage plants.

Messrs. Perkins & Co., for Bouquets.

Messrs. Kelway & Son, for Herbaceous plants.

Messrs. J. Laing & Son, for Begonias, Gloxinias, Caladiums, &c.

Mr. H. B. May, for Ferns and Foliage plants.

Messrs. Cannell & Son, for Calceolarias, Gloxinias, and Pelargoniums.

Messrs. Jas. Carter & Co., for Calceolarias, Gloxinias, and Herbaceous plants.

L'Horticulture Internationale, for new plants.

Messrs. B. S. Williams & Son, for Orchids and Azaleas.

Mr. J. R. Box, for Begonias.

Silver Gilt Knightian Medal.

Mr. G. Featherby, for Fruits.

Messrs. James Veitch & Son, for Apples.

Earl of Radnor, for Vegetables.

Messrs. James Carter & Co., for Vegetables.

Silver Gilt Banksian Medal.

Mr. W. Iceton, for Foliage plants.

Silver Flora Medal.

Messrs. James & Son, for Calceolarias.

Messrs. Fromow & Son, for Rhododendrons and Acers.

Messrs. G. Jackman & Son, for Roses and Herbaceous plants.

Mr. W. Rumsey, for Roses.

Messrs. Wallace & Co., for Lilies, Herbaceous plants, &c.

Messrs. Cripps & Son, for Acers.

Messrs. Dobbie & Co., for Herbaceous plants.

Messrs. Cheal & Son, for Herbaceous plants.

Messrs. G. Cooling & Son, for Roses.

Mrs. Wingfield, for group of plants.

Mr. H. J. Jones, for Begonias and Pelargoniums.

W. A. Gillett, Esq., for Gloxinias.

G. H. Rolls, Esq., for Orchids.
Messrs. Lewis & Co., for Orchids.

Silver Banksian Medal.

Malcolm S. Cook, Esq., for Orchids.
Mr. Geo. Mount, for Apples.
Mr. S. Mortimer, for Cucumbers.
Messrs. Fellowes & Ryder, for Tomatos.
Mr. Fyfe, for Tomatos.
Mr. M. Stevens, for table decorations.
Mr. J. Prewett, for table decorations.
Horticultural College, for table decorations and Strawberries.
Mr. J. R. Chard, for table decorations.
Mr. B. Ladhams, for Herbaceous flowers.
C. Tasker, Esq., for Cannas and Roses.
Messrs. A. Roozen & Son, for Tulips.
Mr. H. O. Garford, for floral decorations.

GENERAL MEETING.

JUNE 9, 1896.

Sir TREVOR LAWRENCE, Bart., in the Chair.

Fellows elected (50).—Frank H. Anderson, F. G. Arbuthnot, Miss Backhouse, H. Cary Batten, Robert Beasley, W. H. Broome Mrs. Austin Browne, Percy G. C. Burnand, George Bryan, Robert Campbell, M. V. Charrington, Stephenson Clarke, John Cohen, Frederick W. Coles, Francis A. Cordrey, Tyson Crawford, Roger Cross, Miss Mathilde Dresden, William Edwards, Admiral Fairfax, T. Hamilton Fox, J.P., Walter St. John Fox, S. Grant, Brindaban C. Ghost, Mrs. Hibbert, Mrs. Ernest Hills, J. Hollingworth, Herbert Jones, Walter Lazenby, James H. Lockley, Stuart H. Low, A. Maxim, James McCullum, Mrs. McIntosh, Lady S. Melville, Mrs. Hope Morley, Lord Edward Pelham-Clinton, Mrs. C. Rogers, Ferdinand Rösing, Harry Sankey, J. A. Shaw, Coningsby C. Sibthorp, Mrs. Soames, S. T. Spalding, George Stuart, Mrs. G. H. Trollope, Alfred Webster, John Wells, Richard Whibley, Stephen Withers.

Society affiliated (1).—Maldon Horticultural Society.

Associate (1).—Frederick Gifford.

The President presented Veitch Memorial Medals to Mr. F. W. Burbidge, M.A., of Trinity College Botanic Gardens, Dublin, and to Mr. Malcolm Dunn, Dalkeith Palace Gardens.

Similar awards for services rendered to Horticulture were made to Mons. H. de Vilmorin, Paris, and to Professor C. S. Sargent of the Harvard University, U.S.A., both of whom were unable to attend.

Professor George Henslow gave a Lecture (illustrated by magic-lantern views) on "The Movements of Plants." (See page 34.)

DEPUTATION TO THE YORK GALA.

JUNE 17, 1896.

A deputation consisting of ten members of the Society was appointed by the Council to visit the Great Show at York, with power to recommend Awards, &c., in the same way as is done by the other Committees of the Society sitting at Westminster or at Chiswick.

The deputation was composed of Sir Trevor Lawrence, Bart., President of the Society; Philip Crowley, Esq., F.L.S., F.Z.S., Treasurer; W. T. Thiselton-Dyer, Esq., C.M.G., F.R.S., Director of the Royal Gardens, Kew; T. B. Haywood, Esq., of Reigate; Sydney Courtauld, Esq., of Braintree; Mr. Harry J. Veitch, F.L.S., of the Royal Exotic Nurseries, Chelsea; Mr. H. Self Leonard, of the Hardy Plant Nurseries, Guildford; Mr. Malcolm Dunn, of the Palace Gardens, Dalkeith; Mr. James Hudson, of Gunnersbury House Gardens; and the Rev. W. Wilks, M.A., Vicar of Shirley, and Secretary of the Society.

The deputation was received at the railway station at York on Tuesday afternoon by the Lord Mayor, who extended a welcome to the city, and by Sir Joseph Terry, Chairman of the York Horticultural Committee; and at 7.30 in the evening the deputation was entertained at dinner by the members of the Committee.

On Wednesday morning the deputation arrived on the Show ground a little before 11 o'clock, and at once proceeded to inspect all the exhibits.

Awards Recommended :—*Silver Gilt Flora Medal.*

To Messrs. James Veitch & Sons, Chelsea, for a group of plants.

Silver Flora Medal.

To Mrs. Tetley, Leeds (gr. Mr. Eastwood), for twelve show Pelargoniums.

Silver Banksian Medal.

To Mrs. Gurney Pease, Darlington (gr. Mr. J. McIntyre), for Ferns.

To Mr. H. Pybus, Monkton Moor, Leeds, for Zonal Pelargoniums.

To Sir J. Reekitt, Bart., Swanland Manor (gr. Mr. G. Wilson), for a group of plants.

To Mr. C. J. Mee, for a group of plants.

First Class Certificate.

To *Lælio-Cattleya Gladiator* (*Lælia tenebrosa* ♀ × *Cattleya Mendelii* ♂) (votes, unanimous), from Messrs. Charlesworth & Co., Heaton, Bradford.

Award of Merit.

To *Cattleya Mossiæ Giant* (votes, unanimous), from Messrs. Low & Co., Clapton.

To *Cattleya superforbesii* (*C. superba* ♀ × *C. Forbesii* ♂) (votes, 8 for), from Mr. James Cypher, Cheltenham.

To *Odontoglossum crispum* 'H. Steel' (votes, 6 for), from H. Steel, Esq., Tapton Court, Sheffield (gr. Mr. G. Howarth).

To *Odontoglossum crispum* 'H. Mason' (votes, unanimous), from Messrs. Charlesworth & Co., Heaton, Bradford.

To *Papaver orientale* 'Prince of Orange' (votes, 8 for, 2 against), from Messrs. Harkness & Sons, Bedale.

To *Iris germanica* 'G. Yeld' (votes, unanimous), from G. Yeld, Esq., York.

To *Dipladenia amœna* 'Lord Deramore' (votes, 7 for), from Lord Deramore, Heslington Hall, York (gr. Mr. J. Hornby).

To *Lobelia tenuior* 'Heaths' Tree' (votes, 6 for, 4 against), from Messrs. Heath & Son, Cheltenham. A plant that may be useful for baskets in greenhouses.

Botanical Certificate.

To *Bifrenaria Charlesworthii* (votes, unanimous), from T. R. Jessop, Esq., Roundhay, Leeds (gr. Mr. T. Tyson).

Highly Commended.

A group of 20 Alpine plants (votes, unanimous), from Mr. J. A. Rodwell, York.

A superb plant of *Cycas siamensis* (votes, unanimous), from Mrs. Gurney Pease, Darlington (gr. Mr. McIntyre).

New *Rhododendrons* (votes, unanimous), from Messrs. Anthony Waterer, Knap Hill, Woking.

A group of Carnations (votes, unanimous), from Messrs. Laing & Mather, Kelso, N.B.

A group of Hardy Plants (votes, unanimous), from Messrs. Fisher, Son & Sibray, Sheffield.

Grand plants of *Hedera prolifera*, *Cycas revoluta*, and *Ixora Pilgrimi* (votes, unanimous), from the Marquis of Zetland, Upleatham (gr. Mr. Nicholas).

Grand plants of *Erica ventricosa alba tinctoria*, *Phœnocomia prolifera*, and *Bougainvillea Sanderiana* (votes, unanimous), from Mr. James Cypher, Cheltenham.

Commended.

A box of seedling *Begonias* (votes, 8 for, 2 against), from F. B. Grotrian, Esq., Hessle, Hull (gr. Mr. Murchison).

A Bride's Bouquet (votes, unanimous), from Messrs. Perkins & Son, Coventry.

A Ball Bouquet (votes, unanimous), from Messrs. Perkins & Son, Coventry.

Cultural Commendation.

To Mr. T. Tyson, gardener to T. R. Jessop, Esq., Roundhay, Leeds, for a plant of *Oncidium cornigerum* (votes, unanimous).

To Mr. T. Tyson, for a plant of *Saccolabium guttatum* (votes, unanimous).

To Mr. McIndoe, gardener to Sir Joseph Pease, Hutton Hall, Guisborough, for dishes of Lemons, Citrons, and Oranges (votes, unanimous).

To Mr. Nicholas, gardener to the Marquis of Zetland, Upleatham, for a magnificent plant of *Davallia fijiensis plumosa* (votes, unanimous).

To Mr. J. Snowden, gardener to the Rev. G. Yeates, York, for a superb plant of *Adiantum concinnum* (votes, unanimous).

To Mr. S. Hardcastle, York, for 10 Succulents, very finely grown (votes, 7 for, 3 against).

After the deputation had finished their work, a luncheon was given in their honour by the Council of the Gala, all the judges being also invited. Sir Joseph Terry, President of the Gala Committee, was in the chair, and he was supported by the Lord Mayor and by the Dean of York, by the Sheriff, and other leading gentlemen of the city and neighbourhood.

In the evening a banquet was given by the Lord Mayor and Lady Mayoress at the Mansion House, to which all those members of the deputation who had not already returned to London were invited.

GENERAL MEETING.

JUNE 23, 1896.

Mr. GEORGE BUNYARD in the Chair.

Fellows elected (16).—E. Bertolacci, Alister Clark, Mrs. H. Gilliat, Samuel Hardy, Oliver F. Hartland, Rev. W. Clarke Hose, Mrs. J. Godwin King, J. W. Pewtress, W. Pritchard, F. C. Proctor, D. B. Rapport, J. T. Richardson, Simon Rogers, William Tarling, Miss F. Hunt Ward, A. F. White.

Mr. Samuel Heaton gave a Lecture on "Gardeners—Past, Present, and Future." (*See* page 40.)

SCIENTIFIC COMMITTEE.

JANUARY 14, 1896.

Dr. M. T. MASTERS, F.R.S., in the Chair, and six members present.

The Colouring of Flowers and Fruit.—The following communication was received from Mr. Roupell, of Harvey Lodge, Roupell Park, in reply to inquiries upon the artificial colouring of Apples:—"The lime used was the best chalk lime, air-slaked. The lime and soot formed part of the compost with which they were planted; say, one part soot, two parts lime, two parts

charred refuse from rubbish heap, and twenty parts ordinary kitchen garden soil, carefully blended. In this comparatively dry and warm compost the trees made short growths of well-ripened wood and bore well the second year. I have since had lime and soot sown over the trees just before the buds began to burst in the proportion of two parts lime and one part of soot, and at the rate of half a pound of the mixture to the square yard. This served as a protection against the larvæ of certain moths as well as a manure. The soot and lime should be used quickly to avoid the escape of ammonia. The mixture caused a deeper colour in Apples and Pears. This was especially so in Lane's Prince Albert, Red Joaneting, Mr. Gladstone, Irish Peach, Melon Apple, Cox's Orange Pippin, Beauty of Kent, and Peasgood's Nonesuch. The pale green varieties, such as Lord Suffield, were, I think, made to assume a deeper green, just as Grass and Wheat do when dressed with a similar mixture. My experience is that Pears and Apples are more highly coloured when grown on a soil abounding in iron and dressed with lime and soot than in a soil deficient in iron and lime. Louise Bonne of Jersey, Beurré Clairgeau, Trout Pear, Clapp's Favourite, Durondeau, Beurré Rance, Uvedale's St. Germain, Verulam, Vicar of Winkfield, and Catillac are deficient in colour when grown on a cold clay soil. I have also observed that Apples and Pears are more brightly coloured in a good showery season than in a very dry and hot one, and that some Apples, such as the Dartmouth Crab and some astringent cider Apples are red all over or not merely on the sunny side." With reference to other fruits, Mr. Roupell further remarks: "Black Grapes colour best in partial shade, and white varieties when exposed to the sun. They then assume an amber tint. Thomson's Vine manure intensifies the purple or black of Grapes. Green Tomatoes become red when ripened in the dark, and some Apples gathered green become deep yellow and flushed with crimson, according to the variety in the fruit room." The Secretary observed that several letters had appeared in the *Gardeners' Chronicle* upon this subject, some writers attributing the brightening of the colour mainly to "air and direct sunlight," others to the presence of iron, sulphate of iron and soot being given. "The iron helps the colouring by its absorbing sun heat, and thus rendering the soil warmer." One writer observed that of 100 trees of Wellington only one produced

red Apples, and “that tree had soot and iron given to it. With these, and plenty of light and sun, I get the best colours I can wish for.” The writers generally insist on a warm soil. In commenting on these experiences, Dr. Müller observed that it was theoretically doubtful whether the iron—a common ingredient in all soils—has any effect, as it enters only to a very minute extent into the essential parts of plants (the chlorophyll). If it be applied with lime, then the solution of iron sulphite, under the influence of the air, is very soon changed into calcium sulphate and ferric hydrate. The former may then act beneficially as a “holder” of ammonia, and enhance the activity of the soil. But since the soot contains ammonia salts (chiefly sulphate), it would seem that the colouring may be most probably traced to this ingredient, rather than the iron or lime. It was suggested that experiments should be tried by using nitrate of ammonia, in the proportion of 1 oz. to a gallon of water.

Rose Sporting.—Mr. J. Hall, of Cheltenham, wrote to say that “in the summer of 1890 a Rose grown on Dartmoor from a slip of a tree in Torquay bloomed, and on comparing the two the one from Dartmoor was a deep red orange, the one in Torquay a pale lemon yellow. The soil in Torquay is the red sandstone; Dartmoor is decomposed granite with some peat.” Mr. Wilks observed that the Rose (from the above description) might be Wm. Allen Richardson, which is of a deep apricot colour, but has the habit of changing to a pale yellow, so that the soil may not have been the cause.

Cyclamen Unhealthy.—Mr. Leek, of Bullington House, forwarded a plant which did not appear to be attacked with any disease, but had received some check by cold, draught, or other cause. Mr. Douglas observed that he had experienced a similar effect in some of his plants. Mr. Leek also sent a *Primula*, remarkable for an increased viscosity, but it appeared to be perfectly healthy.

Lycaste Skinneri, virescent.—Mr. Sanders forwarded a specimen in which the perianth was green. The cause of virescence is obscure, being permanent on the well-grown green Rose.

Dianthus Attacked by Grubs.—With reference to this subject brought before the Committee at the last meeting, Mr. Douglas remarked that he had lost some thousands of plants, and that the only remedy was to pick out the grubs with a needle.

Dr. Müller observed that it attacks the very youngest plants when only three or four leaves are present, and especially *D. glacialis*.

Peach Tree Gumming.—Mr. S. T. Wright sent a piece of a trunk badly gummed from Chiswick, saying that it appeared to have some grubs upon it, but none could be seen. It was forwarded to Mr. McLachlan for further investigation. Mr. Douglas observed that when gumming first appears, trenching all round the roots, with the insertion of fresh loam, checks it at once, but if it has reached an advanced stage, as in the specimen sent, the tree must be removed.

Pinus Coulteri (macrocarpa).—Dr. Masters exhibited some handsome cones and foliage of this tree grown at Lord Ducie's grounds, Tortworth, Gloucestershire. It is also quite hardy in Kent. He observed that it was hardier than *P. insignis*, though it comes from a lower altitude than the former in California. *P. Coulteri* differs from the variety *macrocarpa* in having curved spines.

Orchids Monstrous.—Dr. Von Müller sent specimens, drawings of which were shown by Dr. Masters, of flowers of *Glossodia* and *Caleana*, the former having three lips, while the latter had no lip but a petaloid column, &c.

SCIENTIFIC COMMITTEE, MARCH 10, 1896.

R. McLACHLAN, Esq., F.R.S., in the Chair, and four members present.

A further specimen of a diseased trunk of a Peach tree was sent from Chiswick. The bark was covered with exudations of gum, and spotted all over with the expelled excreta of a small caterpillar, which was found burrowing under the bark, and penetrating only a very short distance into the wood. The insect was found to be the larva of *Semasia Woberana*, the Apple or Pear tree Bark Moth. It was suggested that a plaster of clay mixed with paraffin, and applied to the trunk of the trees, might prove a remedy, or rather a prevention. As the insect never penetrates to any great depth, it was thought that the trees would survive many years, even when seriously affected.

Specimens of Carnations sent from Mr. Peters, Givan's Grove, Leatherhead, were found to be affected with a fungoid disease attacking the main stem. They were referred to Dr. Masters for identification of the fungus, but it was not thought that any practical remedy could be suggested other than burning the affected plants, and starting fresh ones on fresh soil.

Mrs. Miller, of Winestead Rectory, Hull, sent blossoms of Crocus and Hellebores for identification. Mr. Veitch offered to endeavour to do this.

M. Godefroy Lebeuf, of Paris, exhibited some sprays of metallised *Odontoglossum crispum* with foliage of Ivy and Euonymus. They were beautifully executed, the natural form of the flowers being admirably preserved, and the venation of the leaves perfectly distinct.

SCIENTIFIC COMMITTEE, MARCH 24, 1896.

R. McLACHLAN, Esq., F.R.S., in the Chair, and six members present.

A letter was read from Dr. Masters respecting the diseased Carnations submitted to the Committee by Mr. Peters, in which he stated that the leaves were damaged by a species of eelworm, and advised that the plants should be burnt, as there was no cure for them.

Dr. Russell reported that he was about to begin, conjointly with Mr. Wilks, the planned experiments on the coloration of Apples. Meanwhile, he had analysed and determined the ammonia in the soot which is to be used in these experiments, and found it to contain 4 per cent.

Mr. Colville Browne, of Hextable, Kent, sent a specimen exhibiting a very remarkable interpenetration of a shoot of a Potato passing right through the substance of another Potato in an oblique direction. This is probably due to the formation by the shoot of a solvent substance, which enables it to soften and dissolve the tissues with which it is in contact.

SCIENTIFIC COMMITTEE, APRIL 7, 1896.

J. T. BENNETT-POË, Esq., in the Chair, and three members present.

Potato perforated by a Subterranean Stem.—With reference to the specimen brought to the last meeting, it is said that the penetration was effected by the secretion of a solvent substance or ferment. This was the conclusion drawn by M. Prunet ("Rev. Gén. de Bot.," vol. ii., p. 166, 1891). On the other hand, G. J. Peirce would attribute the penetration to mechanical pressure, and not to the action of a diastatic ferment ("Bot. Zeit." lii. 169).

Bitter and Bergamot Oranges from La Mortola.—Mr. Henslow exhibited specimens from the Marchese Hanbury. The former was raised by him from a pip of an Orange from a tree at Rome, said to have been planted by St. Dominic about A.D. 1200, which still exists at the monastery of St. Sabina. It is supposed to have been one of the earliest trees introduced into Europe. The Bitter Seville or Bigarade Orange (*Citrus vulgaris*, *Risso*) is believed to have been the first to be cultivated. Mr. Henslow observed that the so-called "wild Orange" used for stocks in Malta bears a quite uneatable fruit of a similar kind. The Bergamot is a small Orange ($2\frac{1}{2}$ to 3 inches in diameter). The peel is smooth and thin, abounding in essential oil of a peculiar fragrance, strongly suggestive of eau de Cologne. It is cultivated at Reggio in Calabria, and is unknown wild. It first appeared in the latter part of the seventeenth century.—("Pharmacographia," p. 121.)

Violets.—Mr. Henslow also showed some Violets from Mentone remarkable for their large size. When dried they were $1\frac{1}{2}$ inch in diameter. They are commonly sold in the Riviera, but are mostly very deficient in scent. They may be the source of the Violet Princess of Wales, which is of French origin.

Fasciated Brussels Sprouts.—Mr. Smee sent a very remarkable specimen. The stem was cylindrical at the base, but widened out into a broad paddle-shaped and flattened extremity, covered with minute buds. He also exhibited excellent photographs of the same.

SCIENTIFIC COMMITTEE, APRIL 21.

Dr. M. T. MASTERS, F.R.S., in the Chair, and eight members present.

Primulas, Auricula \times *Alpine*.—Mr. Douglas exhibited a very interesting collection of hybrid *Primulas*, between the “Show” (*P. auricula*) and the “Alpine” (*P. pubescens*, according to Mr. Baker). The former was the pod bearer. They were all raised from the fruit of one truss, and presented a considerable amount of variety in the foliage and the colours of the flowers. The mealiness was much reduced, and indeed nearly absent from the leaves. Two specimens exhibited curious abnormal conditions upon which Dr. Masters will report. It was stated by the late Mr. Shirley Hibberd, at the *Primula* Conference in 1886, that in his opinion these two classes of *Primula* would not cross, but he observed that “no man was so competent” to experimentise upon them as Mr. Douglas. He had thus completely negatived Mr. Hibberd’s surmise.

The Bardfield Oxlip.—Mr. Henslow exhibited specimens of this plant received from Mr. J. French, Felstead, Essex, with a communication containing his observations on the variations of plants under the influence of their environments. With reference to the genus, *Primula*, he observes: “An instance of ‘bog’ modification is that of the Bardfield Oxlip (*P. elatior*). This in bog land would be unrecognisable to the ordinary observer. There are acres of boggy pastures at Great Bardfield, where every plant of this species has but one floret to each peduncle, and a small rosette of leaves resembling *Celandine* more than *Primrose*. The common *Paigle* (*P. veris*) lives in the same meadows unchanged. It is, therefore, clearly in the capacity of the Oxlip to be moulded by its environment alone.” With regard to hybridisation, Mr. French notices that while “*Primroses* seed themselves tolerably well alone, and also remain constant, or very nearly so [in a garden], as they do in the wild state, when you put them in company with the Oxlips (unless I am mistaken altogether in my observations) a different arrangement will ensue. The Oxlips still remain unaltered, for the Bardfield Oxlip cannot be changed by crossing, whereas the *Primrose* and *Paigle* are both very unstable; but the seedling *Primroses*

will gradually (that is in the course of four or five seasons) very materially change, and that apparently without any fixed law. The petals may or may not alter their colour or become foliaceous; the corolla may put on the form known as 'hose-in-hose;' the peduncle will almost certainly be lengthened, and the typical Primrose leaf will gradually vanish and give place to a form intermediate between that of Primrose and Oxlip; the leaf, in fact, will be the only hybrid feature, so to say, none of the other changes pointing either to that or any other particular direction. My impression is that the changes finally result in sterilisation, and that the plant, if left alone, will never recover its normal state, but I cannot speak with certainty on this point. My experience is that the Bardfield Oxlip does not readily seed itself, but my firm belief is that its pollen readily fertilises the Primrose, and occasionally, but not often, the Cowslip. It, in common with the others, is visited by many sorts of insects." Mr. French sent a great variety of blossoms of Primroses with white and pink corollas, as well as foliaceous and other modifications; of these he observes, "The enclosed flowers are from Primroses which have seeded in a natural way in my garden, but the changes have not been developed until the second or third year has passed. My contention is that the changes are due in part to cultivation, but very much more to disturbances *initiated* by the application of pollen from other plants, and more particularly from the stamens of the Bardfield Oxlip, in the company of which they have been grown. It may be of interest to say that I live on the limiting line of the two species, the Oxlip and Primrose, and can easily point out the most northerly Primroses and also the most southern Oxlips, and at one place there is not a mile between the two; but the line is absolute, and neither plant intrudes into the other's domain." Dr. Masters observed that the only change the Oxlip undergoes in his garden is to sometimes assume a pink colour.

Wellingtonia, ♀ *Flowers*.—Dr. Masters exhibited shoots of the *Sequoia gigantea* with young terminal cones in the flowering state. They are scarcely a quarter of an inch in length, and therefore, easily overlooked, but being more globular in form when once seen, they can be readily distinguished from the leafy apices of other shoots.

Sirex gigas in Timber.—He also showed a specimen of the “Hornet Saw Fly” from Dropmore. It is rather larger, but somewhat closely resembles a hornet in appearance. The grub bores through timber. Mr. McLachlan observed that it was formerly much more abundant, having been introduced from North Europe.

Niphetos Rose, *Malformed*.—Dr. Masters also exhibited good examples of a foliaceous calyx in this Rose, the sepals being converted into large pinnate leaves.

Tyloses in Beech Root.—Dr. Masters exhibited a microscopic slide showing the cellular growth in the vessels known by this name. To such an extent had it occurred that the wood showed a dark brown streak, indicating the position of the vessels containing the tyloses.

Mignonette, *Origin of*.—Mr. Henslow suggested, from a comparison between *Reseda odorata* and *R. Phyteuma*, a common species in South France and Algeria, that this latter was the source of the garden plant. In the original description in *Bot. Mag.*, A.D. 1790, it is said to be Egyptian, but the garden Mignonette is not in the Egyptian nor in North African Floras, and does not appear to be known wild. The differences between this and *R. Phyteuma*, as Mr. Douglas observed, are not greater than between varieties of *R. odorata*. The wild species, it is true, has not the scent; still, as Mr. Henslow observed, when a bunch of the flowers are taken, there is just a faint odour suggestive of the Mignonette.

Caltha palustris, *Honey Glands of*.—Mr. Cuthbertson called attention last year to the apparent absence of these structures described by Müller as on the sides of the carpels in his “Fertilisation of Plants,” for that author spoke of a “fold” on the sides of the carpels, with a gland in the fold. This has not been seen in any English plant, but there is a spot where the epidermal tissue is papillate, suggestive of an abortive gland. Mr. Cuthbertson forwarded specimens received from Germany, but still nothing was present in agreement with Müller’s description, but only as occurs here.

SCIENTIFIC COMMITTEE, MAY 5, 1896.

Dr. M. T. MASTERS, F.R.S., in the Chair, eight members, and Prof. Zacharias, Director of the Botanic Garden, Hamburg, were present.

Primula, Auricula \times *Alpine*.—Dr. Masters reported upon two abnormal specimens brought to the last meeting occurring among the seedling hybrids raised by Mr. Douglas. One was foliaceous, the corolla, &c., being represented by minute green leaves. In the other the corolla was only abnormally bent.

Bardfield Oxlip.—With reference to the statement by Mr. French that this species resisted being crossed by the Cowslip or Primrose, the Rev. C. Wolley Dod sent specimens from his garden to show that there was reason to suppose that they were the result of the Bardfield Oxlip having been crossed by the Primrose. The foliage sent, however, agreed almost entirely with that of the Oxlip type, and in one case only of the flowers was there a slight tendency to produce the inflated calyx tube and the crest or corona within the corolla tube, characteristic of Primroses and Cowslips, the total absence of this being a marked feature of the Oxlip.

Raspberry-stem Borer.—Mr. McLachlan remarked on a specimen sent by Mr. Pearson, of Chilwell, that the injury resulted in the destruction of the buds, the eggs being hatched in the flower; but that it was difficult to suggest a remedy. Cart-grease smeared round the base of the canes, or kerosine emulsion washed round the stems has been suggested as preventives. The grub was that of *Lampronia rubiella*, a small moth. It formed the prey of tomtits.

Primula Auricula, \times .—Mr. Douglas exhibited plants of crosses between the pubescent type (the pod bearer) and the Alpine; and remarked upon the perseverance of humble bees in visiting the Auricula; within a quarter of an hour he had observed that a bee visited 508 flowers, thus giving two seconds apiece, on the average, to each.

Cineraria, Origin of.—Mr. Douglas also exhibited several sprays of different shades of mauve, from seedlings raised from the plant at Kew of *Cineraria cruenta*. He called attention to the original illustration of this species, and of *C. lanata* in the *Botanical Magazine*, and considered that the probabilities were—

in favour of *C. lanata*, or else a cross with this species being the source of the cultivated forms.

Colouring of Flowers.—Dr. Russell gave some details of a preliminary experiment with white Hyacinths treated with various salts to test the influence they might have upon the colouring of the flowers. The only bulbs obtainable were, unfortunately, very inferior in quality, as the experiment was not proposed till too late in the season. On March 6 the bulbs were treated with the following solutions, all being grown in water :—Cobalt nitrate, copper sulphate, ferrous sulphate, manganese nitrate, nickel nitrate, chromium acetate, zinc nitrate, ammonium nitrate, urea, soluble Prussian blue, coli, and water alone, distilled. All contained 13 grains to a pint of distilled water. As the liquids evaporated they were made up with a stronger solution of 30 grains to the pint. Two plants only indicated any colour in the flowers. The one treated with nickel nitrate on March 25 looked very bad, limp and yellow ; the bud, which would naturally have been green, showed a distinctly pink colour. The one treated with ferrous sulphate blossomed, and had also a decidedly pink tinge. All the rest were either more or less arrested in growth, sickly, or dead. As a preliminary experiment, and that with unsatisfactory materials, the result, so far as the above two were concerned, was interesting ; but it was the general opinion that the solutions were too strong, and that this would probably account for the injurious effects upon the growth of the Hyacinths. It is proposed to try further experiments with white Pelargoniums.

Narcissus, Crosses.—Mr. Engleheart, in describing the various results of his experience in crossing the Narcissus during the last fifteen years, observed that the main cross was between the Trumpet Narcissi (as pod bearers) and the Poeticus. This gave rise to the Incomparabilis section ; but that among the seedlings of the cross there would sometimes arise pure Poeticus ; the male was always more or less prepotent, but sometimes the offspring would show no trace of the female parent. Dr. Masters observed that the same result sometimes occurred in other plants. Dr. Zacharias alluded to the case of Strawberries ("False Crosses," *Gard. Chron.*, 1894, p. 568), and Mr. Henslow mentioned that when the Rhododendron "Monarch" (which contained the species *R. jasminiflorum* twice, *R. javanicum*, *R.*

Lobbii, and R. Brookeanum var. gracile) was crossed with R. malayanum the result was almost pure malayanum.

Larch Disease.—Dr. Masters exhibited a specimen showing the fungus, *Peziza Willkommi*, in the fruiting stage. It had attacked the stem to such an extent that the whole of the wood had grown excentrically.

Abies amabilis.—He also exhibited a fine spray of this tree laden with many catkins of a brilliant red and yellow colour. It had been previously described, from imperfect specimens, as bearing single catkins only.

SCIENTIFIC COMMITTEE, JUNE 9, 1896.

Dr. M. T. Masters, F.R.S., in the Chair, and nine members present.

Experiments in Colouring Flowers.—As a preliminary experiment, Dr. Russell tested the power of the soil to retain the various salts proposed to be used in the case of white Pelargoniums. He took two glass tubes, 1 foot in length and $\frac{3}{4}$ inch in diameter and drawn out at one end. These were filled with soil from a garden, the amount being $8\frac{1}{2}$ cubic inches. He poured in a solution of sulphate of copper (13 grains to the pint, or $\frac{1}{4}$ oz. to the gallon). The water which came through was tested; but $4\frac{1}{3}$ pints passed through before any trace appeared, and that only after one month; 56 grains were held by the soil. Similarly with sulphate of iron: $3\frac{1}{2}$ pints of the solution passed through before any iron was present in the water. This took twenty-eight days, so that 47 grains were held by the soil. As an additional experiment, some of the same soil was saturated by shaking it with water; it was then put into a tube similar to the previous ones, and sulphate of copper (13 grains to the pint) poured on as before; $2\frac{3}{4}$ pints passed through before any copper was traceable. This took fifteen days, so that 36 grains were held by the soil. The next experiment was made with ammonium salts. Ammonium nitrate was poured on the soil (13 grains to a pint); 4 oz. came through before the ammonium salt was found. The soil thus retained $2\frac{3}{4}$ grains. This took only three-quarters of an hour. Ammonium chloride.—With this salt,

5 oz. passed through before ammonia was detected, therefore the soil held $3\frac{1}{2}$ grains. It ran through in half-an-hour. The significance of these experiments showed that unless the salts be placed directly in contact with the roots, it might be retained in the soil and no result would follow.

Prepotency of the Male Parent.—Mr. Douglas brought a very interesting communication on prepotency in crossing Carnations from Martin Smith, Esq., of The Warren, Hayes, of which the following is an abstract:—"One very strong bit of evidence in favour [of the male prepotency] is given by the crosses on 'Germania.' This is a flower of tremendous individuality, and if any flower could transmit its peculiarities to its descendants, it would be this; yet Germania (yellow) is swamped by the prepotency of the pollen parent in the great majority of cases. I hardly ever get a yellow worth having; but when I do I find them, as a rule, pure reproductions on a most feeble scale of the mother; and I always regard them as products of Germania fertilised by pollen of flowers on the same plant, or from one in the immediate vicinity." Mr. Smith sends a table of crosses in which is Germania (seed parent) \times King of Scarlets:—Produce, two yellow-ground Picotees, one yellow self; Germania \times Sir B. Seymour, all the produce took after the male parent; G. \times a maroon, nearly all the offspring maroons; G. \times Mrs. Vernon Harcourt: offspring, five scarlets and one maroon; G. \times Ariadne gave scarlet, crimson, and rose. "The strongest evidence on the other side is afforded by the produce of Madame A. Warocqué \times G. I have at one time or another, since 1892, saved nearly ninety plants from this cross, and I never raised a yellow from it; a few buffs and apricots, but never a true yellow, by far the largest proportions being scarlets, rose, and crimsons. It seems to me to be easy enough in a cross for other colours to swamp yellow, but quite another thing for yellow to override other colours, unless it exists in both parents. The most it seems able to do is to produce orange and buff." In further illustration of this fact he gives the following cases:—Ruby \times G. gave two rose (no trace of yellow); Governor (maroon) \times G. gave one yellow, one buff, two rose, and one crimson; Madame Van Houtte and Ella Murray \times G.: all the offspring took after the mother. Mr. Smith adds the following interesting fact with "whites":—"When you cross violent contrasts of colour, such

as purple and yellow, or scarlet and yellow, you are apt to get a good proportion of whites." He gives as examples:—Corunna (yellow) \times Hayes (scarlet): offspring, two whites, one scarlet; Germania (yellow) \times purple, gives maroons and whites; G. \times N. Murray (scarlet), four out of five were white; Lord Sefton \times G. gave four whites, one maroon, three yellow or buff.

Primulas as Skin Irritants.—Mr. Dod observed that besides the well-known case of *P. obconica* (which, however, has no effect upon himself), he finds *P. japonica* to be very irritating; and what is more remarkable, the "farina," a secretion of wax on the surface of the plant, produces the same effect, causing blisters on the hand.

Cineraria Hybrids.—Mr. Bennett-Poë exhibited a plant of *C. l'Heritieri* (φ) \times a greenhouse variety of *C. cruenta*, raised by Mr. Lynch, of the Botanic Gardens, Cambridge, and also a similar cross by himself. The flowers were very different. In the former they were red, whole-coloured, the petals long and dependent; in Mr. Poë's they were white, with tips purple, and the heads flatter, more resembling an ordinary garden form.

Cytisus scoparius var. Andreanus.—A question having been raised as to the seed of this variety coming true, Mr. Wilks observed that about one-third came true, but in others the blossom reverted to those of the Broom, but were larger than on the wild Broom. Mr. Henslow exhibited sprays from a seedling which had come true. The plant had been grafted on the common Broom.

Peas Penetrated by Oats.—Mr. Henslow exhibited a specimen—one of many found among Peas—of a Pea which had been hollowed out by a weevil, and then penetrated by an Oat. It illustrates, presumably, the remarkable property of penetrating the soil possessed by Oats, fruits of *Erodium*, &c., which are provided with a spirally-twisted hygroscopic awn. This on becoming moistened untwists, and so thrusts the lower end downwards. In this case it happened to penetrate the hollow Peas.

Garden Hybrids.—Mr. Henslow described some specimens received from Rev. C. W. Dod, consisting of natural crosses between species of *Polemonium*, *Papaver*, and *Heuchera*. In one case, *Polemonium flavum* \times *P. cœruleum*, the hybrid scarcely differed from the male parent; but in all the others the cross was more decidedly intermediate. The following are a

few of the points which showed the proportional intermediate characters. Taking, *e.g.*, *P. cœruleum*; the hybrid : *P. reptans*; the length of blades of similar leaves were as 3 : 4·5 : 5. The apex of a leaflet—shortly acute; sub acuminate; acuminate. Anther elongated, golden yellow; shorter, pale yellow; shortest, white. Size of pollen-grains—2 : 1·75 : 1·5, &c. With regard to *P. flavum* × *P. cœruleum*, Mr. Dod writes: “This is the most interesting of the many hybrids of *Polemonium* which come up in my garden. I have no doubt of the hybrid, because I have carefully saved seed of *P. flavum*, and the hybrid has shown itself among several sowings. It is interesting because in colour and flower it so nearly follows the pollen parent. The difference in habit is considerable. *P. c.* has a perpendicular habit of growth, but the hybrid follows *P. flavum* in being divaricate at the base, the hybrid is absolutely barren, though the parents are both profuse seeders. The hybrid, however, is most prolific in other ways; for any stump or stalk grows readily and luxuriantly.” With regard to other characters, the hybrid is more decidedly pubescent than in the stem, &c., of *P. c.*; but less so than *P. fl.* The petals of *P. c.* have a round purple ring at the base of the corolla. In the hybrid this is wanting, as it is also in *P. fl.*, &c. The cross between *Heuchera cylindrica*, with green flowers, and *H. sanguinea* with crimson flowers, is very obvious, the hybrid having rose-red flowers. The pollen, unlike that of the parents, was very bad. Though the leaves resembled those of the parents in size, the veining agreed mostly with that of *H. sanguinea*, the angles between the palmate veins being less acute than is the case in *H. c.* In the form of the calyx, the hybrid also approximated that of *H. s.* rather than that of *H. c.* In *Papaver orientale* var. *bracteatum* × *P. rupifragum*, this hybrid, though decidedly intermediate, approaches *P. rupifragum* the nearest. Thus while *P. or.* is hirsute, *P. r.* is pubescent. In the cross the hairiness is of an intermediate character. This is well seen in the calyx by the following proportions:—*P. or.* : Hyb. : *P. rupifragum*; stiff curved hairs : soft curved hairs : tomentose. The peduncle has cords scattered, as in endogens, in *P. orientale*; while in the hybrid and in *P. rupifragum* the peduncle is much smaller, having the cords in a ring. The corolla is scarlet in *P. orientale*; orange in hybrid and *P. rupifragum*, &c. Generally speaking, therefore, the

hybrid is intermediate, but approximates *P. rupifragum*. With regard to other hybrid Poppies, Dr. Masters observed that M. Vilmorin had succeeded in crossing *P. orientale* with *P. somniferum*, and also with *P. Rhæas*. Mr. Wilks tried very carefully to cross a Shirley Poppy with the Iceland Poppy, but the result was identical with the Shirley strain, except that the influence of the Iceland pollen seemed to have brought back all the wild black blood of *P. Rhæas*, the elimination of which is the distinguishing mark of the Shirley Poppies, and that to which they owe their chief beauty.

The Leek.—Dr. Masters exhibited a curious specimen, in which the leaves were very large, conrescent, and spiral in growth, forming a large sheet.

SCIENTIFIC COMMITTEE, JUNE 23, 1896.

Dr. M. T. MASTERS, F.R.S., in the Chair, and three members present.

Dianthus, Colours of.—With reference to the colours of Carnations, Mr. Douglas observed that the yellows are apt to revert to other colours, and mentioned as an instance 200 seedlings from a yellow, among which no yellow appeared.

Cabbage Palm Fruit.—Mr. J. H. Maiden, successor to Mr. Ch. Moore, formerly curator for fifty years of the Botanic Garden, Melbourne, sent some fruit. They are small and globular, about the size of marbles. The Palm is *Livistona australis*, described as a tall and graceful tree, 80 feet in height. They were forwarded to Chiswick to be grown.

Tomatos, Monstrous.—Dr. Masters exhibited some Tomatos of the modern globular form, remarkable for possessing small exerted supernumerary carpels. These had grown on the placentas in the place of ovules. It was not uncommon in the old grooved Tomatos (due to the flowers having been synanthic), but it had not appeared before on the smooth fruit. It was received from Dickson's, of Chester.

Pinus Lambertiana.—Dr. Masters also showed a shoot of this tree, known in California as the Sugar Pine, bearing numerous orange-coloured male catkins.

Curious Moss-growth.—Mr. J. P. Way, of Warwick School, sent a remarkable specimen, found near the New Forest. It was of the shape of a double convex lens, about 6 inches across; the stems all radiating from the middle. It was forwarded to Dr. Braithwaite, who reports as follows:—"The moss is *Leucobryum glaucum*, common in this state, but very rare in fruit. It grows under two conditions: (1) In boggy heaths, when it takes a more expanded form, being always wet; (2) in woods, where it occurs in circular patches, beginning of the size of a sixpence, rooting, and going on increasing to the dimensions of a half-crown. The branching goes on centrifugally, and the tufts are so dense that the easiest way for them is to lie between the surface of the ground and the older stems above. Then, probably, after the first heavy rain the cushion swells up like a sponge, and is torn away from the earth, to become a white lump when dry, which is then blown about by the wind, just like the Rose of Jericho, *Anastatica hierochuntica*. The plant would not grow again as a whole, but it throws off small ones, which grow and form new colonies. (See Br. "Moss Flora," page 85.)

FRUIT AND VEGETABLE COMMITTEE.

JANUARY 14, 1896.

PHILIP CROWLEY, ESQ., in the Chair, and eighteen members present.

Awards Recommended:—

Silver-gilt Knightian Medal.

To Messrs. Bunyard & Co., Maidstone, for a collection of 100 varieties of Cooking Apples in splendid condition.

Silver Banksian Medal.

To Mr. J. Watkins, Hereford, for a collection of new and little-known Apples, many amongst them being local seedlings.

To Messrs. Laing & Son, Forest Hill, for 36 dishes of Apples and Pears.

To Messrs. Cheal & Sons, Crawley, for 20 dishes of very interesting and rare varieties of Apples and Pears.

Award of Merit.

To Dessert Apple 'Lord Hindlip' (votes, unanimous), from Mr. J. Watkins, Hereford. Of medium size, flat at the base,

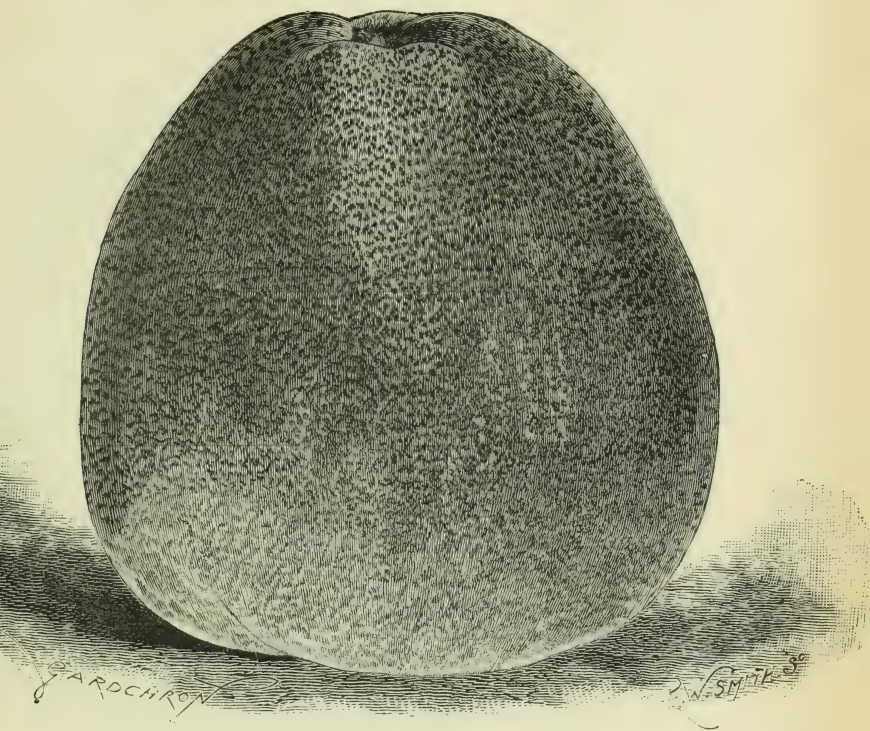


FIG. 1.—APPLE, 'LORD HINDLIP.' (*Gardeners' Chronicle*.)

rising into a cone, somewhat shouldered; eye small and depressed; stalk slender and rather deeply inset; brightly coloured with streaks of crimson spotted with russet; of very fine flavour; said to be a good bearer; season December, January, and February. (Fig. 1.)

To Cooking Apple 'Royal Late Cooking' (votes, 14 for), from Her Majesty the Queen, Windsor Castle (gr. Mr. Owen Thomas).

Large, smooth, roundish, heavy ; eye large, slightly depressed ; stalk very short set in a wide slight depression ; pale greenish-yellow in colour ; a free bearer ; a seedling raised many years ago in the royal gardens by Mr. Powell. The fruits shown had been gathered from a large standard tree. (Fig. 2.)

To Dessert Pear 'Beurré Perran' (votes, unanimous), from

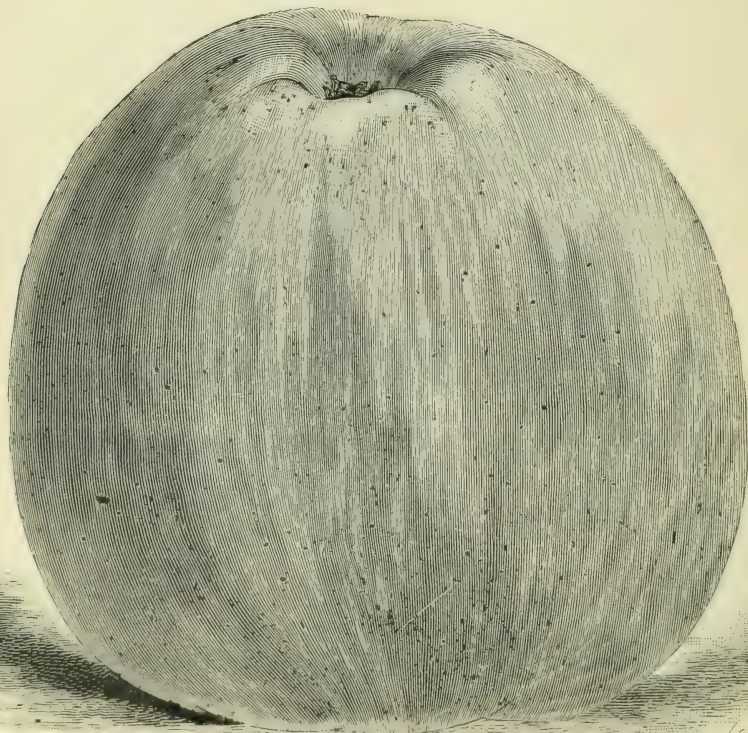


FIG. 2. — APPLE 'ROYAL LATE COOKING.' (*Gardeners' Chronicle*.)

C. W. Lea, Esq., Hallow, Worcester (gr. Mr. S. Hurlstone). Large, somewhat uneven, roundish, a little like 'Passe Crassane' but quite distinct ; eye small and open, not depressed ; stalk very long, thick, marked with a projecting buttress and a swollen nob or lump near the inset, not depressed ; yellow, covered all over with

rough russet; melting; of superb flavour and quality for the time of year; season January and February. (Fig. 3.)

Other Exhibits.

Mr. W. Prior, Bouks Hill, Sawbridgeworth, sent a Seedling

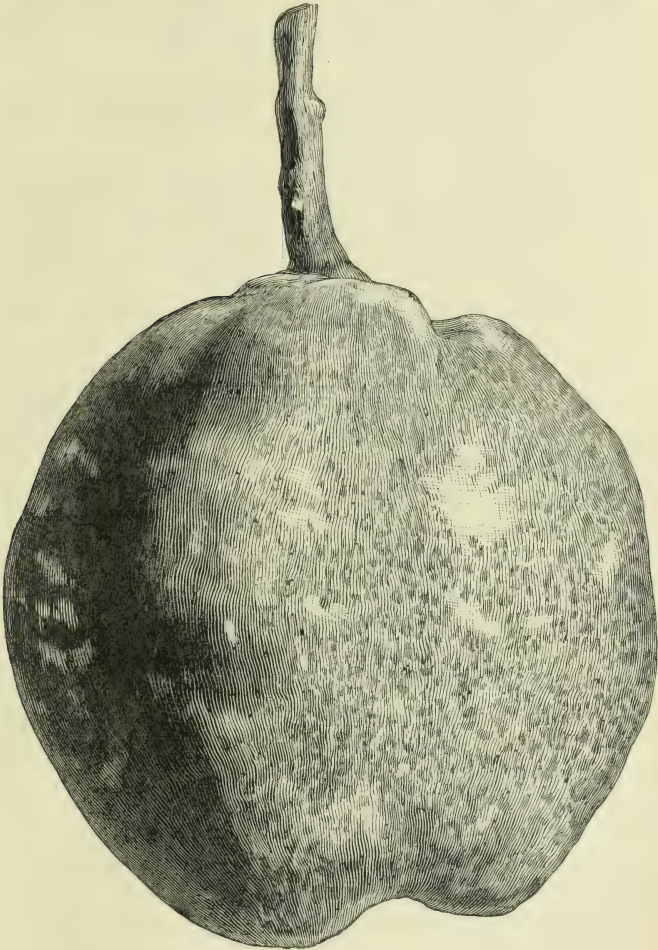


FIG. 3.—PEAR 'BEURRÉ PERRAN.' (*Journal of Horticulture*.)

Cooking Apple named 'Sir Walter.' Large, roundish; eye large, slightly depressed; stalk short in a wide basin; pale green,

slightly sprinkled all over with rough russet; flavour brisk and pleasant. It was considered a promising variety, but the fruits were too shrivelled to form a definite opinion, and the Committee requested that it might be shown earlier next year in better condition.

Messrs. Cheal & Sons sent Dessert Pear 'Marie Guise.' A long pear-shaped fruit with very long stalk; eye large and prominent; flavour sweet and juicy.

Messrs. Cheal & Sons also sent Dessert Pear 'Bergamotte Collette.' A round Bergamotte-shaped fruit with a long stalk; of good quality for the time of year.

W. Roupell, Esq., Harvey Lodge, Roupell Park, sent Apple 'Borden Parsonage.' A good market variety, being a very heavy cropper and of bright colour. It greatly resembles some of the old cider Apples of Kent.

A. F. Pears, Esq., Isleworth (gr. Mr. W. Farr), sent a beautiful dish of Tomato 'All the Year Round.'

Messrs. R. Veitch & Son, Exeter, sent Apples 'Cornish Gilliflower,' 'D'Arcy Spice' (excellent), 'Newtown Pippin,' 'Winter Warden,' and 'Cornish Aromatic.' 'Winter Warden' is a local Devonshire orchard Apple, a good keeper and cooker; strikingly like 'Cornish Aromatic' in appearance, but perfectly distinct in flavour.

FRUIT AND VEGETABLE COMMITTEE,

FEBRUARY 11, 1896.

PH. CROWLEY, Esq., in the Chair, and twenty-three members present.

Awards Recommended:—

Silver-gilt Knightian Medal.

To Her Majesty the Queen, Windsor Castle (gr. Mr. Owen Thomas), for a collection of 100 dishes of Apples.

To Messrs. Bunyard & Co., Maidstone, for a collection of 100 dishes of Dessert Apples.

To A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummins), for a large collection of Apples and Pears in superb condition.

Silver Knightian Medal.

To Messrs. Lane & Sons, Berkhamsted, for 50 dishes of Apples.

To Messrs. Rivers & Son, Sawbridgeworth, for a large collection of Apples with some baskets of beautiful home-grown Oranges.

To Messrs. Laing & Son, Forest Hill, for 75 dishes of Apples and Pears.

To Messrs. Cheal & Son, Crawley, for 90 dishes of Apples and Pears.

Silver Banksian Medal.

To the Hon. G. M. Fortescue, Dropmore, Maidenhead (gr. Mr. Herrin), for a collection of Apples.

Bronze Knightian Medal.

To Lord Foley, Esher (gr. Mr. Miller), for a collection of Apples, Grapes, and Mushrooms.

Other Exhibits.

Mr. H. Becker, Jersey, exhibited a model of a new system of glazing with movable glass roofing for greenhouses which attracted a good deal of attention. Also a very handy and very cheap box for storing fruit and for 'sprouting' early Potatoes.

Mr. J. R. Stevens, Hassocks, sent some pots of his early forcing Strawberry, named 'Stevens's Wonder.' Also a box of picked fruit of the same.

J. G. Morris, Esq., Allerton Priory, Liverpool (gr. Mr. Craven), sent some dishes of a rare Apple named 'Pomeroy of Lancashire.' The blossom of the tree is of such a lovely pink that it is said to be worthy of cultivation for that reason alone; it is, however, an excellent cooking variety as well as a good keeper. Mr. Craven strongly recommends it for gardens in the North of England.

J. R. Saw, Esq., Bernard Street, Russell Square, sent a Seedling Apple of the 'Bess Pool' type, named 'Beauty Pippin.'

H. Balderson, Esq., Hemel Hempstead, sent a Seedling Apple, called 'Scott's Prolific,' resembling both 'Wadhurst Pippin' and 'Beauty of Kent.' Fruit large, flat-sided, conical, short thick stalk, eye slightly depressed in an uneven depression; streaked with red.

The Duke of Rutland, Belvoir Castle (gr. Mr. Divers), sent two Apples, together with jars of each in a cooked state (i.) 'Dewdney's Seedling,' and (ii.) 'Jenkinson's Seedling.' The first was considered so like to 'Hollandbury' as to be practically indistinguishable from it. The latter was considered an excellent variety, but very like 'Bedfordshire Foundling.' A special vote of thanks was accorded to Mr. Divers for the pains he had taken to place the Apples before the Committee in a fitting manner, the jars of cooked fruit being a most praiseworthy effort, only that sugar should never be added to cooked fruit that is sent for adjudication.

Mr. H. J. Sheppard, Bedford, sent a Seedling Apple named 'Clapham Beauty.'

Messrs. Pearson & Sons, Chilwell, Notts, sent a Seedling Apple, called 'Clifton Seedling.' The variety was raised in Leicestershire, and the original tree, now about twelve years old, stands in a cottage garden. Fruit from it sent to Messrs. Pearson in April, 1894, was fine in colour, sound, brisk, and of fair flavour for dessert, but this season, owing to the enormously heavy crop, the tree was allowed to carry, the fruit was both smaller and not of such good flavour.

Mr. Owen Thomas, Royal Gardens, Windsor, sent a new variety of Cucumber, called 'Frogmore Winter Prolific,' a cross between 'Lockie's Perfection' and 'Rochford's Market.' Mr. Thomas considered it an excellent winter-bearing variety.

FRUIT AND VEGETABLE COMMITTEE, MARCH 10, 1896.

T. FRANCIS RIVERS, Esq., in the Chair, and eighteen members present.

Awards Recommended :—

Silver Banksian Medal.

To his Grace the Duke of Richmond and Gordon, Goodwood (gr. Mr. R. Parker), for a collection of Apples.

First Class Certificate.

To Cucumber 'Marvel' (votes, 11 for), from Mr. S. Mortimer, Farnham.

To Dessert Apple 'Blue Pearmain' (votes, 13 for, 1 against), from the Society's Gardens at Chiswick. Of large size; high conical shape; excellent flavour; good appearance, the skin being yellow, almost entirely covered with flecks and streaks of crimson, and these again speckled all over with minute dusty spots. A very fine late Dessert Apple.

To Cucumber 'Frogmore Winter Prolific' (votes, 10 for,



FIG. 4.—APPLE 'GOODWOOD PIPPIN.' (*Gardeners' Chronicle*.)

3 against), from Her Majesty the Queen (gr. Mr. Owen Thomas). A cross between 'Rochford's Market' and 'Lockie's Perfection.'

Award of Merit.

To Apple 'Goodwood Pippin' (under name 'Lincolnshire Reinette') (votes, unanimous), from his Grace the Duke of Richmond and Gordon, Goodwood (gr. Mr. R. Parker). The correctness of the name and its suitability is a little doubtful as the fruit shown was gathered from a tree in the Duke's gardens

at Goodwood, and is supposed to be of local origin. The tree is said to be a very old one, probably as much as a hundred years old, bearing fifteen bushels of fruit last season. It is an excellent variety for winter use, both for Dessert and for Kitchen purposes.

Other Exhibits.

Mr. Stevens, Hassocks, showed Strawberry 'Stevens' Wonder.'

Mr. Watkins, Pomona Farm, Hereford, sent Apple 'Adkins' Seedling' which had been kept at Chiswick to test its keeping quality, which appeared to be all that could be desired.

A Pear, resembling 'Winter Nelis' in shape but not in flavour, being sharper, with a slight touch of acidity, was brought from Chiswick for name. It was suggested that it might be 'Suzette de Bavay.'

Mr. Palmer, Andover, sent Apple 'Stubbs' Seedling,' or 'Winter Quarrenden,' a much flattened, bright crimson fruit.

Mr. Owen Thomas, gardener to Her Majesty at Windsor, exhibited Apple 'Royal Late Keeping.'

Earl Percy, Syon House (gr. Mr. Wythes), showed a bundle of fine Asparagus which had been forced with a covering of only dry leaves in the open air.

Mr. Wythes also showed a fine new Borecole called 'Syon Hardy Sprouting,' a cross between 'Asparagus Kale' and 'Cottager's Kale.' It was requested that seed should be sent to Chiswick for trial.

Messrs. Barr & Son, Covent Garden, sent two varieties of Borecole 'Barr's Variegated' and 'Barr's Exquisite Dwarf Purple Curled.' It was requested that seed of the latter might be sent to Chiswick for trial.

FRUIT AND VEGETABLE COMMITTEE, MARCH 24, 1896.

Dr. HOGG, in the Chair, and nineteen members present.

Awards Recommended :—

Silver Banksian Medal.

To Earl Percy, Syon House (gr. Mr. Wythes), for a most interesting collection of 24 varieties of Salads.

Bronze Banksian Medal.

To Messrs. G. V. de Luca, Hill & Co., 6 Long Lane, Aldersgate Street, for a new vacuum system of bottling fruits and vegetables. The system commends itself for its extreme simplicity and inexpensiveness combined with a perfect result.

Other Exhibits.

Mr. Wythes showed a new Broccoli, 'Veitch's Main Crop,' of which seed was requested to be sent to Chiswick for trial.

Mr. W. Toughton, Preston, sent Apple 'La cashire Scotch Bridget.'

Sir H. Jenkyns, K.C.B., Botley, Hants (gr. Mr. W. Davey), sent an Apple, a local seedling.

Mr. A. G. Hooking, Oldown House, Almondsbury, sent six Apples for name. 'Bess Pool,' 'Wyken Pippin,' 'Striped Beaufin,' and 'Round Winter Nonsuch' were recognised, and the other two were considered to be probably 'Beauty of Kent' and 'Blenheim' or 'Golden Noble,' gathered before they were ripe.

Mr. Jarman, Chard, sent under the name of 'Whiteways Whimple Wonder' an Apple recognised as 'Granger's Pearmain,' a variety which varies almost more than any other, the same tree producing two distinct forms, one tall and conical, the other flat and round. The fruits are sometimes russetty all over, sometimes smooth and clear-skinned. It is a strong grower but generally not a very free bearer.

Mr. W. Batchelor, Harefield Park, Uxbridge, sent an Apple for name, but it was unknown.

Messrs. Rivers & Son, Sawbridgeworth, sent a dish of Apple 'Wagener.' They were beautiful to look upon and soft and tender to eat, with a gently pleasant flavour; decidedly good for the time of year.

Mr. W. Bull, Ramsden, Essex, sent a seedling Apple named 'Sunset.'

FRUIT AND VEGETABLE COMMITTEE, APRIL 7, 1896.

PHILIP CROWLEY Esq., in the Chair, and eighteen members present.

Awards Recommended:—

Silver Banksian Medal.

To C. J. Massey, Esq., Galloway House, Garliestown (gr. Mr. James Day), for a small collection of Apples in splendid condition.

Bronze Banksian Medal.

To Mr. Will Taylor, Hampton, for a small collection of very large Apples.

Other Exhibits.

Earl Percy, Syon House (gr. Mr. Wythes), sent some beautiful specimens of Fig 'St. John's.'

A. H. Smee, Esq., Wallington (gr. Mr. Cummins), sent an extraordinary fasciated stem of Brussels Sprout, which resembled an enormous cobra sitting up with hood broadly extended.

The Duke of Richmond, Goodwood (gr. Mr. Parker), sent an Apple named locally 'Late Keeping,' or sometimes 'Webb's Seedling.' The tree is about fifty years old, erect growing and with exceedingly large foliage, and is a fair cropper and fine keeper, not a single decayed fruit being found at the present date amongst several bushels of it. It is not an Apple of taking appearance, being somewhat rough and dingy-looking, but was for the time of year of very good flavour.

Mr. J. Hopkins, High Cross, Framfield, sent an Apple supposed to be a local seedling. It was considered so near to 'Calville St. Sauveur' as to be almost, if not quite, identical. It is a wonderful keeper, but otherwise of little merit.

FRUIT AND VEGETABLE COMMITTEE, APRIL 21, 1896.

PHILIP CROWLEY, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—

Silver Banksian Medal.

To Mrs. Wingfield, Ampthill (gr. Mr. Empson), for a collection of vegetables.

To Earl Percy, Syon House (gr. Mr. Wythes), for a collection of fruit and vegetables.

To Messrs. G. V. de Luca, Hill & Co., 6 Long Lane, Aldersgate Street, for a collection of fruits, vegetables, &c., preserved in their new self-closing bottles. (*See p. v.*)

Award of Merit.

To Radish, 'White Olive-shaped Extra Early' (votes, unanimous).

To Radish, 'Deep Scarlet Olive-shaped Extra Early' (votes, unanimous).

Both the above had been grown in the Society's gardens from seed sent by Messrs. Vilmorin, of Paris. The seed was sown in cold frames on March 5.

Cultural Commendation.

To Mr. Empson for a dish of 'Royal Sovereign' Strawberry.

To Mr. Wythes for a dish of 'Royal Sovereign' Strawberry.

Other Exhibits.

Mr. Marsh, The Priory, Warwick, sent an Apple which he proposed to call 'Countess of Warwick.' The Committee considered it identical with 'Beauty of Kent.'

The Maharajah of Dinbungh (gr. Mr. H. Thorne), sent two specimens of a gourd named 'Lagenaria vulgaris clavata.' They measured 5 ft. 6 inches in length and 6 inches in diameter.

Mr. Wythes sent two varieties of Broccoli, 'Suttons' Late Queen' and 'Bouquet.' The Committee requested that the latter might be tried at Chiswick.

C. H. Wright, Esq., Halstree, Oswestry (gr. Mr. Roberts), sent a collection of Apples.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. Crook), sent some 'Sturmer Pippins' in excellent condition, which had been simply stored in cases in a cellar. He also sent an Onion 'Forde Longkeeper' in wonderful condition, from seed sown in the autumn of 1894.

J. B. Fortescue, Esq., Boconnoc, Lostwithiel (gr. Mr. Page), sent an Apple named 'Ironsides.'

Philip Crowley, Esq., Waddon House, Croydon, sent some specimens of Apple 'Bismarck,' which had been grown under glass, to show its flavour, which was excellent.

FRUIT AND VEGETABLE COMMITTEE, MAY 5, 1896.

PHILIP CROWLEY, Esq., in the Chair, and sixteen members present.

Awards Recommended :—

Award of Merit.

To Radish 'Bright Red, Olive-shaped, Leafless' (votes, 9 for, 1 against), grown in the Society's Gardens from seed sent by Messrs. Vilmorin, of Paris. This variety was very remarkable for the exceeding smallness of the foliage.

To Rhubarb 'Victoria' (votes, 12 for), from the Society's Gardens.

To Rhubarb 'Colis' Seedling' (votes, 10 for), from the Society's Gardens.

Cultural Commendation.

To Mr. W. Meads, gardener to W. A. Henderson, Esq., Bascot Park, Faringdon, for Melons 'The Countess' and 'Sutton's Scarlet.'

To Mr. Wythes, gardener to Earl Percy, Syon House, for (i.) Strawberries, (ii.) Peaches, and (iii.) Figs; (i.) 'Royal Sovereign,' (ii.) 'Amsden June,' and (iii.) 'Brown Turkey.'

Other Exhibits.

Joseph Wheatley, Esq., Woodlands, Mirfield (gr. Mr. Frith), sent a Seedling Melon. The Committee were favourably impressed, but desired to see it somewhat later in the season.

From the Society's Gardens came Radish 'Ever Tender,' grown from seed, sent by Messrs. Veitch, of Exeter, and Radish 'Express Forcing,' from seed sent by Messrs. Carter, of Holborn. The seed had been sown in cold frames on March 5.

A collection of Rhubarb was also shown from the Society's Gardens.

Messrs. Laxton, Bedford, sent Strawberries (i.) 'Royal Sovereign' and (ii.) 'Leader.'

Mr. Wythes brought a new forcing Potato 'Wythes' Seedling.' Three members of the Committee were requested to take samples and cook them and report. (*See* p. lxvi.)

Mrs. Thackwell, Rostellan Castle, Co. Cork (gr. Mr. Sheppard),

sent a Seedling Potato, which was dealt with in the same way as the preceding one. (*See* p. lxvi.)

Philip Crowley, Esq., Waddon House, Croydon, sent several varieties of Apples with which he had experimented with a view to keeping them. One series had been coated with melted paraffin wax as soon as they had been gathered, and another series had been packed in cork dust. The waxed ones were found to be the plumpest, but their flavour was distinctly inferior to those from the cork dust, which were excellent.

H. B. Fisher, Esq., Pitt Place, Chelmsford, sent some 'Sturmer' Pippins, which had been packed in a case and stored in a wine cellar. They were very fine indeed, both for flavour and condition.

Dr. Hogg, 99 St. George's Road, S.W., brought some Apples received from Mr. Nelson, of the Botanical Gardens, Melbourne. They were large, handsome fruits, with very sweet vinous flavour, somewhat resembling 'Wealthy,' but were considered to be probably of American origin.

FRUIT AND VEGETABLE COMMITTEE, MAY 19, 1896.
TEMPLE GARDENS.

MR. GEORGE BUNYARD, in the Chair, and twenty-eight members present.

Awards Recommended:—

First Class Certificate.

To Nectarine 'Cardinal' as a forcing variety (votes, 19 for, 2 against), from Messrs. Rivers & Son, Sawbridgeworth. Fruits large, finely coloured, and of exquisite flavour.

Award of Merit.

To Cucumber 'Sensation' (votes, 9 for, 8 against), from Mr. Mortimer, Farnham, a cross between 'Prize-winner' and 'Lockie's Perfection.'

Other Exhibits.

The Hon. L. O'Brien, Moor Park, Ludlow (gr. Mr. Haggart), sent an Apple named 'Moor Park.'

Mr. Irving, Leigh House Gardens, Datchet, sent a new Strawberry 'Duke of York,' a handsome fruit, which it was requested might be tried at Chiswick.

Mr. T. Bousall, Elmet Hall, Leeds, sent a Broccoli which he proposed to call 'New Late-Keeping Universal.' The Committee considered it identical with 'Model.'

Mr. Mortimer, Farnham, sent another seedling Cucumber, 'Mortimer's Approved,' a cross between 'Prize-winner' and 'Improved Telegraph.'

Mr. Fyfe, Lockinge Gardens, Wantage, sent a Tomato 'Dwarf Champion.' The Committee considered it to be very like 'Acquisition,' and requested that it might be tried at Chiswick.

Messrs. Laxton, Bedford, sent Strawberry 'Leader.'

FRUIT AND VEGETABLE COMMITTEE, MAY 28, 1896.

CHISWICK.

PHILIP CROWLEY, Esq., in the Chair, and eleven members present.

The Committee inspected thirty-three samples of Spinach, of which a report will be found on page 69.

Award Recommended:—

Award of Merit.

To 'Improved Prickly,' grown from seeds sent by Messrs. Watkins & Simpson, Exeter Street, Strand, London.

FRUIT AND VEGETABLE COMMITTEE, JUNE 9, 1896.

PHILIP CROWLEY, Esq., in the Chair, and seventeen members present.

Awards Recommended:—

Silver Knightian Medal.

To Messrs. de Rothschild, Gunnersbury (gr. Mr. Hudson) for pot trees of nectarines. This was a most interesting exhibit,

as Mr. Hudson had grown the trees of 'Early Rivers' and 'Lord Napier' nectarines side by side under absolutely the same conditions, the trees selected for the experiment being of the same age from the graft, and of identical treatment from the very first. The object was to test the relative merits of the two varieties on the point of earliness, and the result was manifest, for the fruits on the 'Early Rivers' trees were fully ripe; indeed, a dish had been taken off them on June 2, whereas the fruit on the 'Lord Napier' was still hard, and wanted yet at least ten or twelve days more to mature, thus proving 'Early Rivers' to be under precisely and exactly similar conditions a full fortnight or nearly three weeks earlier than 'Lord Napier.'

Silver Banksian Medal.

To Her Majesty the Queen, Windsor Castle (gr. Mr. Owen Thomas), for a collection of twenty-four varieties of early Strawberries grown in the open air. The earliest to ripen this year at Windsor was 'Laxton's No. 1,' a few of which were gathered on May 19, and a dishful on May 21. The plants were last year's runners, and planted in August on a warm border. 'Noble' came in a week later, and 'John Ruskin' a few days only later. 'Leader' is an enormous berry, a strong grower, and a fine cropper, but it is lacking in flavour.

To Mrs. Wingfield, Ampthill (gr. Mr. Empson), for a collection of Fruit and Vegetables.

To Messrs. E. J. Dargeant, Stratton Vineries, Worthing (gr. Mr. W. Kemp), for a collection of Melons and Capsicums. Some of the Melons were very remarkable for the amount and size of the netting, which exceeded anything ever seen in that way before, though the flavour of the less netted ones was far better.

Bronze Banksian Medal.

To A. J. Howard, Esq., Worton Hall Gardens, Isleworth (gr. Mr. A. Pentney), for a collection of vegetables.

First Class Certificate.

To Melon 'Anthony's Favourite' (votes, 11 for, 3 against), from Mrs. Wingfield, Ampthill (gr. Mr. Empson).

To Melon 'Freston Tower' (votes, unanimous), from Mr.

Messenger, Wolverstone Park Gardens, Ipswich. It was a cross between an unnamed seedling and 'Best of All.'

Award of Merit.

To Melon 'Frogmore Orange' (votes, 9 for, 6 against), from Mr. Owen Thomas, Royal Gardens, Windsor.

Other Exhibits.

Mrs. Wingfield sent some fine specimens of 'Royal Sovereign' Strawberries and 'Early Purple Globe' Artichokes, very similar in appearance to the flowerhead of a Cardoon.

Mr. Wythes brought some grand Cherries of a variety called 'Shrecken'; also Potatos, Peas, and Cauliflowers.

Mr. Corbett, Mulgrave Castle, Whitby, sent a very handsome new Tomato of excellent flavour called 'Royal Sovereign.' It was requested that it might be tried at Chiswick.

Mr. Thos. Denny, Down House, Blandford, sent a Melon 'Goodrich's Nonesuch.'

Mr. Chapman, Colchester, sent some fine Asparagus and Apple 'D'Arcy Spice.'

Messrs. Laxton sent a collection of Strawberries.

From the Earl of Radnor, Longford Castle (gr. Mr. Ward), came a tray of the following varieties of Peas: 'Telephone,' 'Telegraph,' 'Duke of Albany,' and 'Early Favourite.'

Mr. Whittaker, Crewe Hall, sent a Melon 'Crewe Hall Seedling,' a cross between 'Premier' and 'Hero of Lockinge.'

Messrs. Daniels, Bergholt, sent 'D'Arcy Spice' Apple.

FRUIT AND VEGETABLE COMMITTEE AT CHISWICK,
JUNE 15, 1896.

PHILIP CROWLEY, Esq., in the Chair, and twelve members present.

Awards Recommended :—

First Class Certificate.

To Strawberry 'Countess' (votes, 8 for, 1 against).

To Strawberry 'Edouard Lefort' (votes, 6 for, 2 against).

[Strawberry 'Auguste Boisselot,' which was greatly admired by the Committee, received a First Class Certificate on July 8, 1890.]

(See Report on Strawberries, p. 71.)

Highly Commended (× × ×).

To Strawberries 'President'; 'Newton Seedling'; 'Princess Royal'; 'Acquisition.'

To Early Turnips 'Long White Forcing,' from Messrs. Vilmorin, Paris; 'Purple-top Milan'; 'White Milan.'

To Pea 'Bountiful,' from Messrs. Sutton, Reading.

Commended (× ×).

To Pea 'Sutton's Marrowfat,' from Messrs. Sutton.

It was resolved that in future trials of Peas the following older standard varieties should be grown alongside the new ones, viz :—

Chelsea Gem.

Duke of Albany.

William I.

Autocrat.

Sharpe's Queen.

Ne plus ultra.

FRUIT AND VEGETABLE COMMITTEE, JUNE 23, 1896.

PHILIP CROWLEY, Esq., in the Chair, and nineteen members present.

Awards Recommended :—

Silver Knightian Medal.

To the Hon. F. J. Savile Foljambe, Osberton Manor, Worksop (gr. Mr. Crasp), for a collection of 14 handsome Queen Pine-Apples.

Silver Banksian Medal.

To Her Majesty the Queen, Windsor (gr. Mr. Owen Thomas) for a collection of 20 dishes of Strawberries and 20 dishes of Cherries.

Cultural Commendation.

To Mr. P. Blair, gardener to the Duke of Sutherland, Stoke-on-Trent, for magnificent specimens of 'Lord Napier' Nectarines.

Other Exhibits :—

From Her Majesty's gardens at Windsor also came a box of Cucumbers 'Frogmore Prolific,' and fruits of a new Tomato 'Royal Windsor,' somewhat resembling 'Blenheim Orange,' which it was requested might be tried at Chiswick. Mr. Thomas also sent three new Strawberries—1. 'Sir Trevor Lawrence,' a large conical wedge-shaped fruit, with a bright fresh flavour. 2. 'Baron Schröder,' a roundish fruit of fine flavour, and very dark colour. 3. 'Dr. Masters,' not unlike 'President' in appearance, but with a distinct pine flavour, though in the specimens sent it was rather flat.

With the above, also came a specimen of the 'Sarda' Melon, a variety obtained in Kabul by Dr. Aitchison, F.R.S., of H.M.'s Bengal Army. Dr. Aitchison, speaking of it as grown in Afghanistan, says ; 'Sarda keeps well and is exported to India in great quantity during the winter, where it is much appreciated by both Europeans and natives. Europeans in India and elsewhere have tried to raise from seed the Sarda Melon. This has always proved a failure, the fruit produced being of a very ordinary form, and never having the flavour of the Afghan fruit. The word Sarda means cold, and subsequently came to mean the last fruits of the season left hanging on the trees when the main crop had been collected. The Melon collected from the plants that yield the Sarda whilst the season is hot, and there is no frost, is, comparatively speaking, an ordinary good Melon, but once the season is ending, and night frosts have set in, and the plants are beginning to be nipped, the gardeners carefully cover the fruit to prevent it from being injured by the frosts, and then collect it when not quite ripe ; these fruits ripen very slowly, will keep through the whole winter, and in flavour seem to improve the longer they are kept. It is this treatment, I believe, that constitutes the difference between the ordinary Melon and the Sarda, and why gardeners out of Afghanistan and Persia have not been able to produce the fine flavoured Peshawur trade article, which, even in the old caravan, now railway, days were carried in perfection to Southern India.' The fruit sent was of a pale white-yellow colour and shaped like a Watermelon, the flavour being conspicuous more by its absence than anything else, and the texture was decidedly tough. Mr. Thomas said of

it in a letter : 'The specimen sent has been ripe for upwards of a fortnight, and I think, if ripened late in the autumn, the fruit would keep after being cut for some considerable time, and prove useful as a winter dessert variety.'

Messrs. Laxton, Bedford, sent two boxes of Strawberry 'Monarch'; also growing plants of Strawberries 'Stevens' Wonder' and 'Monsignor Dupanloup' for comparison.

Mr. J. H. Fraser, Annan, sent a Strawberry 'Thomas Carlisle,' the result of a cross between 'Dr. Hogg' and 'Vicomtesse Hericart.' The specimens sent were somewhat wanting in flavour after their journey.

Mr. Wilkinson, Highlands, Minchin Hampton, sent a Melon 'Highlands Gem.'

Messrs. James Veitch, Chelsea, sent 17 varieties of Peas, amongst them a new one called 'Pluperfect.'

Messrs. Sergeant, Worthing, sent Melons, Capsicums, and Cabbages. Amongst the Melons one named 'Coolgardie' attracted some attention, being very sweet and luscious in flavour.

Mr. G. Read, Brentley Park, Burton-on-Trent, sent a new Melon.

R. Dawes, Esq., Castle Hill, Ealing (gr. Mr. Wickenden), sent a Tomato 'Edmondscote Favourite,' but it was not considered to be a sufficient advance on 'Blenheim Orange.'

Mr. Eckford, Wem, brought a new Pea named 'Pioneer.' It was requested that it might be tried at Chiswick.

R. Burrell, Esq., Westley Hall, Bury St. Edmunds (gr. Mr. Bishop), sent two seedling Melons 1. 'Royal Horticultural Society,' an enormous fruit with very deep flesh, a cross between 'Westley Hall' and 'High Cross Hybrid'; 2. 'Westley Defiance,' a cross between 'Sutton's Monarch' and 'Westley Hall,' a very fine-looking green flesh Melon, with very deep flesh and good texture, but a trifle wanting in flavour.

From Earl Percy, Syon House (gr. Mr. Wythes), came a very nice new Melon 'Syon Gem,' but it was considered rather too small.

Miss R. Cox, Ryde, sent a Strawberry 'John Cox.'

Report from Ph. Crowley, Esq., H. Balderson, Esq., and Rev. W. Wilks on Potatos, referred to on p. viii.

Both Potatos were cooked in precisely the same way—plain boiled—on May 6.

'Wythes' Seedling'—a round Potato, beautiful to look at—was found when cooked to be soft, sweet, and pasty, not exactly watery, but very starchy, and by no means an ideal 'New' Potato. It might prove good later on, but was as yet hardly matured.

'Sheppard's Seedling'—a kidney Potato, very pretty to look at—proved floury, with a pleasant sweet taste, but by no means an ideal 'New' Potato.

FRUIT AND VEGETABLE COMMITTEE, AT CHISWICK,
JUNE 29, 1896.

Mr. JOHN WRIGHT in the Chair, and nine members present.

Awards Recommended :—

Highly Commended (× × ×). [See also p. 64.]

To Peas 'Sutton's Prizewinner'; 'Eureka'; 'Carter's Michaelmas'; 'Boston Unrivalled'; 'Hero of Trowbridge'; 'Lord Granby'; 'The Lord Mayor'; 'The Gladstone'; 'Tall Butter Sugar.'

This last, from Messrs. Vilmorin, of Paris, is a novelty in Peas, as it is cooked exactly as it is gathered, the pods and all being eaten. A dish of them was cooked for the Committee. The Peas were decided to be well named, as they tasted exactly as if butter and sugar had been stirred in amongst them, although neither had been added. This Pea may be recommended to all who are willing to try a strange and unusual vegetable which is far nicer in taste than in appearance.

To Turnips 'Jersey Lily'; Veitch's 'Red Garden Globe'; Sutton's 'Early Snowball'; Cattell's 'Silver Ball'; 'Flat Forcing'; 'Green-top Stone.'

Messrs. James Veitch & Sons, of Chelsea, sent a box of fruit and some growing plants of a magnificent new Strawberry named 'Veitch's Perfection,' a hybrid raised by Mr. Seden from 'British Queen' ♂ crossed with 'Waterloo' ♀. It was found to be of marvellous sweetness and flavour, the foliage and flavour being markedly of 'British Queen' type, and the colour of the fruit almost as dark as 'Waterloo.' It was unanimously resolved to recommend a First Class Certificate to this Strawberry at the next Committee meeting at Westminster.

FLORAL COMMITTEE.

JANUARY 14, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-seven members present.

Awards Recommended :—

Silver-gilt Banksian Medal.

To Messrs. H. Cannell & Sons, Swanley, for a group of remarkably well-grown Primulas.

Silver Flora Medal.

To Mr. Box, Croydon, for a fine group of Primulas.

Silver Banksian Medal.

To Messrs. J. Laing & Sons, Forest Hill, for Crotons, Dracænas, Azaleas, Solanums, and small Orange trees bearing good-sized fruit in great profusion.

To Messrs. J. Peed & Sons, Norwood Road, S.E., for a group of highly-coloured Dracænas, the most beautiful varieties being Willsii, Alberti, and Bartettii.

Other Exhibits.

From F. W. Moore, Esq., Glasnevin, came two varieties of hardy Ericas.

Mr. G. McDougall, Ravenna Cottage, Stirling, exhibited Ferns.

Mr. W. Bull, Chelsea, exhibited *Asparagus retrofractus* and *Pteris serrulata voluta*.

Messrs. J. Veitch & Sons, Chelsea, staged a pretty *Rhododendron* named Multicolor Ensign.

FLORAL COMMITTEE, FEBRUARY 11, 1896.

W. MARSHALL, Esq., in the Chair, and thirty-three members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Messrs. W. Paul & Son, Waltham Cross, for a large group of Camellias.

Silver-gilt Banksian Medal.

To Mr. J. R. Box, Croydon, for a group of Primulas in great variety.

Silver Flora Medal.

To Lord Suffield, Gunton Park, Norwich (gr. Mr. Allan), for a group of Lachenalia Nelsonii.

To Messrs. J. Laing & Sons, Forest Hill, for Begonias, Bertolonias, Crotons, Palms, and Orchids.

To Mr. John May, St. Margaret's, Twickenham, for a fine display of Cyclamen; the plants of dwarf habit carrying large well-formed flowers of great substance.

Silver Banksian Medal.

To Messrs. J. Veitch & Sons, Chelsea, for a group of Blue Primroses.

To Messrs. J. Peed & Sons, West Norwood, for Bertolonias Anthuriums, Dracænas, Begonias, Palms, and Orchids.

To Mr. C. Turner, Slough, for a group of Cyclamen.

To Messrs. Paul & Son, Cheshunt, for two boxes of exquisite Roses.

Bronze Flora Medal.

To Messrs. H. Cannell & Sons, Swanley, for a group of new Primulas.

To Messrs. Barr & Son, Covent Garden, for Snowdrops, Scillas, Chionodoxas, Primula obconica, and Narcissus.

Bronze Banksian Medal.

To Mr. T. S. Ware, Tottenham, for Snowdrops, Irises, Lachenalias, Scillas, and Narcissus.

First Class Certificate.

To Leucoium carpaticum (votes, 14 for), from Mr. T. S. Ware, Tottenham. Flowers borne in pairs on scapes 4 inches in height; white, each segment tipped with green.

Award of Merit.

To Cyrtanthus parviflorus (votes, 22 for), from E. H. Woodall, Esq., Scarboro' (gr. Mr. Hughes). Bright scarlet flowers borne in umbels on long footstalks.

To *Cyclamen Vivid*, strain of (votes, 18 for), from Mr. John May, Twickenham. Plant of dwarf habit; crimson flowers borne well above foliage.

Other Exhibits.

Her Majesty the Queen, Windsor (gr. Mr. Owen Thomas), sent specimens of *Violet Marie Louise*.

Mrs. Wingfield, Ampthill House, Ampthill (gr. Mr. Empson), staged a small group of *Callas*, *Cyclamen*, and *Primulas*.

Mr. H. Tubbenthal, Charlottenburg, Prussia, sent a collection of *Cyclamen* flowers.

From F. W. Moore, Esq., Botanic Garden, Glasnevin, came a small group of cut flowers.

Mr. J. Friend, Rooksnest, Godstone, sent a very fine truss of *Rhododendron caucasicum album*.

From Mr. John Sim, The Temple, Drumlithie, came a plant of *Asparagus medeoloides major*.

Messrs. J. Veitch & Sons, Chelsea, staged *Rhododendrons* and *Cinerarias*.

Mr. W. J. Godfrey, Exmouth, sent flowers of *Calla* 'The Godfrey' and *C.* 'Devoniensis.' The Committee asked to see plants.

From Messrs. F. Sander & Co., St. Albans, came a plant of *Lowrya campanulata*.

Messrs. J. Carter & Co., High Holborn, staged a new *Primula* named Carter's Bouquet.

Mr. W. Bull, Chelsea, sent a collection of Chinese *Primulas*.

FLORAL COMMITTEE, MARCH 10, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-six members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Messrs. W. Paul & Son, Waltham Cross, for a magnificent group of *Camellias*.

Silver Gilt Banksian Medal.

To Messrs. W. Cutbush & Son, Highgate, for a very large exhibit of *Hyacinths* and *Tulips*.

Silver Flora Medal.

To Messrs. J. Veitch & Sons, Chelsea, for Cyclamen grown in small pots. The plants were of dwarf habit, and carried large flowers of varied colour and of great substance.

To Mr. G. Mount, Canterbury, for a very fine group of Roses.

Silver Banksian Medal.

To Major Joicey, Sunningdale Park, Ascot (gr. Mr. Thorne), for a group of Cyclamen.

To the Earl of Jersey, Osterley Park, Isleworth (gr. Mr. Hawkes), for a group of Cyclamen.

To Messrs. J. James & Son, Farnham Royal, Slough, for a group of Cinerarias, the plants being of very dwarf habit.

To Messrs. J. Veitch & Sons, Chelsea, for a group of Blue Primroses.

To Messrs. W. Cutbush & Sons, Highgate, for a group of forcing plants, consisting of Staphylleas, Azaleas, Laburnums, Cratægus, and Lilacs.

To Mr. A. G. Bowles, Hanwell, for a group of Cyclamen.

To Mr. T. S. Ware, Tottenham, for a display of hardy flowers, Narcissus, Tulips, Anemones, Scillas, and Irises.

To Messrs. H. Cannell & Sons, Swanley, for a group of dwarf Cinerarias.

To Messrs. J. Laing & Sons, Forest Hill, for Crotons, Caladiums, Acacias, Dracænas, Orchids, and small Orange trees in fruit.

To Mr. J. R. Box, Croydon, for a group of Cinerarias.

Bronze Banksian Medal.

To Messrs. J. Peed & Sons, West Norwood, for Begonias, Ericas, Dracænas, Palms, Imantophyllums, and Dendrobiums.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers, Irises, Hellebores, Saxifrages, and Narcissus.

First Class Certificate.

To Asparagus Sprengeri (votes, unanimous), from J. T. Bennett-Poë, Esq., Cheshunt. A vigorous growing species of distinct and graceful habit. Leaves long, narrow, and of a bright green colour.

To *Saxifraga* (Megasea) *Stracheyi* (votes, unanimous), from Messrs. Paul & Son, Cheshunt. Flowers borne on long racemes, colour bluish white.

Award of Merit.

To *Hippeastrum* (Amaryllis) Lady Winifred Gore (votes, 20 for), from the Hon. W. F. D. Smith, Esq., M.P., Henley-on-Thames (gr. Mr. Perkins). Large, deep crimson flowers.

To *Lachenalia* Cawston Gem (votes, 12 for), from Mr. C. G. Van Tubergen, jun., Haarlem. Yellowish green. Flowers borne very freely on stout stems.

To *Cupressus Lawsoniana filifera* (votes, 15 for), from Messrs. Paul & Son. A very graceful form with long pendulous growths of a deep green colour.

To *Saxifraga oppositifolia major* (votes, 16 for, 1 against), from Messrs. Paul & Son. Plant of very dwarf habit, with bright rosy-purple flowers borne in great profusion.

To *Pteris Boultonii* (votes, unanimous), from Messrs. J. Veitch & Sons. A very distinct and handsome *Pteris* with long fronds and narrow, graceful pinnæ beautifully crimped at the margins.

Cultural Commendation.

To the Baroness Burdett-Coutts, Highgate (gr. Mr. Willard), for a beautiful group of *Begonia Gloire de Sceaux*.

To Mr. C. Turner, Slough, for a remarkably well-grown plant of *Calla Elliottiana*.

Other Exhibits.

Her Majesty the Queen, Osborne (gr. Mr. Nobbs), sent a large bunch of very fine violets.

F. W. Moore, Esq. Botanic Garden, Glasnevin, sent a very large truss of the beautiful *Rhododendron grande*.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), exhibited an *Amaryllis* named *Claudii*.

Dowager Lady Bowman, Dorking (gr. Mr. Cornish), sent *Epigæa repens* and hardy *Primulas*.

W. M. Bullivant, Esq., Eden Park, Beckenham (gr. Mr. Crosswell), staged a magnificent plant of *Cyclamen Giant White*.

From B. Hooke, Esq., The Towers, Hillingdon, came a collection of *Helleborus orientalis* in variety.

Mr. E. H. Jenkins, Hampton Hill, exhibited specimens of Tree Carnation Winter Bride.

Mr. W. Bull, Chelsea, exhibited plants of *Nidularium Innocentii striatum*, *Geonoma acaulis*, *Crinum Moorei variegatum*, and *Croton Prince of Orange*. The Committee asked to see the two first again.

Messrs. J. Veitch & Sons, Chelsea, sent small plants of *Senecio Greyii*, *S. compactus*, and *Olearia nummulariæfolia*. The Committee also asked to see these again.

FLORAL COMMITTEE, MARCH 24, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-five members present.

Awards Recommended:—

Silver Flora Medal.

To the St. George's Nursery Co., Hanwell, for a group of *Cyclamen*; plants of dwarf habit, each carrying large finely-developed flowers, varying in shades from pure white to deep crimson.

To Mr. T. S. Ware, Tottenham, for a group of hardy flowers consisting of *Primulas*, *Cyclamen*, *Irises*, *Daffodils*, and *Fritillarias*.

To Messrs. J. Peed & Sons, West Norwood, for *Boronias*, *Dracænas*, *Hydrangeas*, *Caladiums*, *Palms*, and *Orchids*.

To Messrs. J. Carter & Co., High Holborn, for a very fine group of *Cinerarias*. Plants of a dwarf, sturdy habit.

Silver Banksian Medal.

To H. H. Gibbs, Esq., Aldenham House, Elstree, Herts (gr. Mr. Beckett), for a group of *Calla Little Gem*.

To Messrs. Barr & Son, Covent Garden, for a group of hardy herbaceous and Alpine plants.

To Messrs. W. Cutbush & Son, Highgate, for *Ericas*, *Palms*, *Azaleas*, *Deutzias*, *Tree Pæonies*, and *Malmaison Carnations*.



FIG. 5.—FRITILLARIA PUDICA. (*Gardeners' Chronicle.*)

Bronze Banksian Medal.

To W. Stacey, Esq., West Drayton, for a small group of Cyclamen.

To Messrs. Paul & Son, Cheshunt, for a group of Amaryllis, hardy shrubs and Alpine plants.

To Messrs. B. S. Williams & Son, Upper Holloway, for a group of Clivias and hardy Azaleas.

To Messrs. H. Cannell & Sons, Swanley, for Zonal Pelargoniums.

First Class Certificate.

To Deutzia Lemoinei (votes, 17 for), from Messrs. T. Cripps & Son, Tunbridge Wells. A very handsome variety of dwarf habit and exceptionally floriferous. Flowers small, white, borne in compact trusses.

To Fritillaria pudica (votes, 11 for, 4 against), from Messrs. R. Wallace & Co. and Mr. T. S. Ware. The pretty bell-shaped flowers are of a deep golden yellow, shaded with orange red. (Fig. 5.)

Award of Merit.

To Anthurium Rothschildianum maximum (votes, 14 for), from Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain). A very fine variety bearing large spathes, spotted and marbled with crimson on a white ground.

To Anthurium pumilum (votes, 11 for, 1 against), from Sir Trevor Lawrence, Bart. A very dwarf compact growing variety, with small deep-green lanceolate leaves, and medium sized roundish spathes; colour scarlet, heavily spotted with crimson.

To Hippeastrum (Amaryllis) Rosalind (votes, 10 for, 4 against), from Messrs. J. Veitch & Sons, Chelsea. Flowers of medium size, orange scarlet, running into white, with a green centre.

To Hippeastrum (Amaryllis) Eros (votes, 15 for), from Messrs. J. Veitch & Sons. Flowers large, white, streaked and flushed with deep pink.

To Tulipa Eichleri (votes, 8 for), from Messrs. Barr & Son. Flowers bright crimson, with darker centre.

To Bellis perennis, 'The Bride' (votes, 9 for, 5 against), from Messrs. H. Cannell & Sons. Large white flowers, borne on stout footstalks.

Other Exhibits.

J. T. Bennett-Poë, Esq., Holmwood, Cheshunt, sent flowers of *Anthurium Andreanum maximum*.

From Mrs. Crawford, Gatton Lodge, Reigate (gr. Mr. Slogrove), came two seedling *Clivias*.

Miss B. Tomlinson, Chellaston, Derby, sent one white Rose blossom—a sport from *Maréchal Niel*. The Committee asked to see three flowers.

W. H. Pownall, Esq., Whitford House, St. Margaret's, Twickenham, exhibited *Camellias*.

From Mr. W. Bull, Chelsea, came a small group of *Clivias Imantophyllums*.

Messrs. Stroud Bros., Finsbury Park, showed a peculiar crested form of *Pteris serrulata*.

From T. Cripps & Son, Tunbridge Wells, came a small group of hardy flowering shrubs.

Mr. Perry, Winchmore Hill, sent a *Fritillaria* named *pluriflora*.

FLORAL COMMITTEE, APRIL 7, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-one members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Messrs. W. Cutbush & Sons, Highgate, for a fine group of plants, consisting of *Acacias*, *Rhododendrons*, *Boronias*, *Kalmia latifolia*, *Ericas*, *Indian* and *Ghent Azaleas*, *Magnolias*, and *Palms*.

Silver Flora Medal.

To Messrs. Barr & Son, Covent Garden, for a group of hardy herbaceous and Alpine plants.

To Mr. W. Rumsey, Waltham Cross, for pot *Roses*, with several boxes of very fine cut blooms.

To Messrs. J. Peed & Sons, West Norwood, for a group of foliage and flowering plants.

Silver Banksian Medal.

To Mr. G. Mount, Canterbury, for a large collection of Roses.

To Messrs. Paul & Son, Cheshunt, for a group of Roses, both standards and dwarfs, in pots.

To Mr. Frank Cant, Colchester, for Roses.

Bronze Banksian Medal.

To Messrs. J. Veitch & Sons, Chelsea, for an interesting group of dwarf hardy flowering shrubs, amongst them being *Corylopsis pauciflora*, *Daphne Genkwa*, and *Rhododendron racemosum*. •

Award of Merit.

To Rose Clara Watson (H. T.) (votes, 15 for, 1 against), from Messrs. Paul & Son, Cheshunt. A vigorous and free blooming variety of good form. Flowers large, white, flushed with salmon pink.

To Stock White Forcing Purity (votes, 14 for), from Messrs. Sutton & Sons, Reading. A variety of dwarf habit bearing large pure white flowers.

To *Polygala chamæbuxus purpurea* (votes, 10 for, 5 against), from Messrs. J. Veitch & Sons. A very dwarf-growing, hardy, evergreen shrub. Leaves small, lanceolate, stiff, and deep green in colour. Flowers small, the outer petals purple, and the inner ones yellow.

To *Arctotis aureola* (votes, 10 for, 2 against), from Messrs. W. Cutbush & Sons. A very old plant with much divided pale green leaves, and large orange-red coloured flowers.

Other Exhibits.

From Wickham Noakes, Esq., Leatherhead, came a large well-grown *Caladium* named Noakesi.

Messrs. J. Laing & Sons, Forest Hill, sent *Streptocarpus Blue King* and *Arisæma speciosa*.

Messrs. Fellowes & Ryder, Orpington, exhibited a *Hippeastrum* named Mrs. Makins.

FLORAL COMMITTEE, APRIL 21, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-three members present.

Awards Recommended :—*Silver Gilt Flora Medal.*

To Messrs. J. Veitch & Sons, Chelsea, for a very large group of greenhouse and hardy plants, Boronias, Pimelias, Ferns, Anthuriums, Marantas, Spiræas, Callas, and Blue Primroses.

To Mr. G. Mount, Canterbury, for some exceptionally fine Roses.

Silver Flora Medal.

To Mr. H. B. May, Upper Edmonton, for a beautiful collection of Ferns.

To Messrs. Paul & Son, Cheshunt, for a group of herbaceous plants, hardy trees and shrubs, &c.

To Mr. John Walker, Thame, for a collection of Roses.

To the Guildford Hardy Plant Nursery, Millmead, Guildford, for a very pretty group of Alpine plants tastefully arranged amongst rocks.

To Mr. T. S. Ware, Tottenham, for a collection of hardy flowers.

To Mr. Frank Cant, Colchester, for four boxes of Roses in excellent condition.

To Messrs. J. Laing & Sons, Forest Hill, for a fine collection of Gloxinias.

To Mr. C. Turner, Slough, for a group of Primula Sieboldi in great variety.

Silver Banksian Medal.

To F. W. Moore, Esq., Glasnevin, Dublin, for an interesting group of hardy shrubs; amongst them being Prunus Padus cornuta, Cytisus biflorus, C. monspeliensis, and Pyrus spectabilis rosea.

To Messrs. J. Peed & Sons, West Norwood, for a group of Clivias, Spiræa confusa, Palms, Ferns, and Azaleas.

To Messrs. J. Cheal & Sons, Crawley, for a group of hardy shrubs and herbaceous flowers.

To Messrs. W. Cutbush & Son, Highgate, N., for a group of double Ghent Azaleas.

Bronze Banksian Medal.

To the Duke of Rutland, Belvoir Castle, Grantham (gr. Mr. Divers), for specimens of Rhododendrons, Magnolias, Amalanchiers, Azara microphylla, &c.

To Messrs. B. S. Williams & Son, Upper Holloway, for a group of Hippeastrums and Tree Pæonies.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers.

First Class Certificate.

To *Myosotis Rehsteineri* (votes, 12 for), from Messrs. Paul & Son, Cheshunt. A dwarf free-growing species bearing small pale blue flowers.

To *Juniperus communis aurea* (votes, unanimous), from Messrs. Paul & Son. A pendulous form of the common Juniper in which the young leaves are heavily tipped with yellow.

Award of Merit.

To *Anthurium Rothschildianum elegans* (votes, 9 for), from Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain). Spathe of medium size, colour pale rose, spotted and splashed with scarlet.

To Wallflower Harpur Crewe (votes, unanimous), from W. Marshall, Esq., Auchinraith, Bexley, and Messrs. Paul & Son. Plant of dwarf habit, with small semi-double flowers of a bright yellow colour.

To Double Cinerarias, strain of (votes, 11 for, 1 against), from Sir Henry Peto, Bart., Misterton, Crewkerne (gr. Mr. Button). A very fine strain, with large violet-rose coloured flowers.

To *Hippeastrum (Amaryllis) Viscountess Hambleden* (votes, unanimous), from the Hon. W. F. D. Smith, Esq., M.P., Henley-on-Thames. A distinct variety with large flowers of fine form; colour crimson, shaded with greenish white in the throat.

To *Maranta major* (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. A very fine ornamental foliage plant with large bright green ovate leaves.

To *Rhododendron Schlippenbachii* (votes, unanimous), from Messrs. J. Veitch & Sons. A distinct, new, hardy variety. Flowers borne in great profusion, colour soft pink, spotted on the upper segments with crimson.

To *Cerasus pseudo-cerasus* (Bastard Cherry) (votes, 13 for), from Messrs. J. Veitch & Sons. A very free-flowering hardy tree, with semi-double pale pink flowers.

To *Carnation Countess of Carrington* (votes, 13 for), from Mr. C. Turner, Slough. Large, clear sulphur-yellow flowers.

To *Hippeastrum* (*Amaryllis*) *Hon. Maurice Gifford* (votes, 8 for), from Messrs. B. S. Williams & Son, Upper Holloway. A very handsome variety bearing large, well-formed flowers of a deep crimson colour.

To *Primula Dr. Jameson* (votes, unanimous), from Messrs. J. Silver & Co., Norbury. A dwarf, free-flowering variety, carrying large purplish coloured flowers.

Cultural Commendation.

To Mrs. Wingfield, Ampthill House, Ampthill (gr. Mr. W. J. Empson), for a finely flowered plant of *Trillium grandiflorum*.

Other Exhibits :—

J. H. Arkwright, Esq., Hampton Court, Leominster, exhibited a very large flowered Primrose, named *Evelyns Beacon*.

W. Chadwick, Esq., Arksey Hall (gr. Mr. Butcher), sent seedling Primrose.

Mr. I. S. Heward, High Street, Littlehampton, staged specimens of *Carnation Lady Edmund Talbot*.

Mr. C. J. Van Tubergen, Haarlem, sent *Erythronium Johnsonii*. The Committee asked to see this again.

From Messrs. Dobbie & Co., Rothesay, came a Wallflower named *Eastern Queen*.

Messrs. J. Laing & Sons, Forest Hill, sent a plant of *Calla Pentlandii* (Laing's var.).

From Mr. R. Dean, Ealing, came a group of gold-laced *Polyanthus*.

FLORAL COMMITTEE, MAY 5, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-six members present.

Awards Recommended:—

Gold Medal.

To Mr. G. Mount, Canterbury, for a superb collection of cut Roses.

Silver Gilt Flora Medal.

To Messrs. J. Veitch & Sons, Chelsea, for a group of Anthuriums, Begonias, Marantas, Boronias, Clanthus, Leschenaultias, and dwarf Japanese hardy flowering shrubs.

To Messrs. Barr & Son, Covent Garden, for a group of hardy plants—Tulips, Pæonies, Phloxes, and Primulas.

Silver Flora Medal.

To Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain), for a collection of Anthuriums, including several new varieties, and some very fine unnamed seedlings.

To W. J. Caparn, Esq., Oundle, Northampton, for a collection of paintings of Irises and Narcissus.

To Mr. J. Walker, Thame, for a collection of Tulips and Maréchal Niel Roses.

To Messrs. W. Cutbush & Sons, Highgate, for a group of foliage and flowering plants, Palms, Boronias, Ericas.

To Mr. W. Rumsey, Waltham Cross, for a group of Roses.

To Mr. T. S. Ware, Tottenham, for a group of hardy flowers—Primulas, Dielytras, Irises, Ramondia pyrenaica, Fritillarias, Tree Pæonies.

To Messrs. Paul & Son, Cheshunt, for a group of Roses, Rhododendrons, Azaleas, Lilacs, and herbaceous plants in great variety.

To Messrs. J. Veitch & Sons, Chelsea, for a collection of Tulips and herbaceous flowers.

To Messrs. J. Laing & Sons, Forest Hill, for a group of plants—Dracænas, Crotons, Pimelias, Gloxinias, Cannas.

Silver Banksian Medal.

To Messrs. J. Peed & Sons, West Norwood, for a group of Azaleas, Caladiums, Pandanus Veitchi, and dwarf Cannas.

To Messrs. W. Cutbush & Son, Highgate, for hardy herbaceous and Alpine plants.

To Messrs. Kelway & Son, Langport, for a group of Pæonies, Irises, and Delphiniums.

To Mr. M. Prichard, Christchurch, for a group of hardy herbaceous flowers.

To Messrs. Hugh Low & Co., Clapton, for Caladiums, Crotons, Dracænas, and Anthuriums.

To Messrs. J. Cheal & Sons, Crawley, for an interesting exhibit of hardy flowering shrubs.

Bronze Banksian Medal.

To S. L. Still, Esq., Lismore, Woodside, Wimbledon Park (gr. Mr. Curtis), for a small group of Amaryllis, Calceolarias, Pelargoniums, and Auriculas.

First Class Certificate.

To *Posoqueria longiflora* (votes, unanimous), from Messrs. W. Balchin & Sons, Hassocks, Sussex. A very old-fashioned stove plant, bearing in dense clusters pure white, tubular, sweetly-scented flowers.

Award of Merit.

To *Canna Roi des Rouges* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). Large deep crimson flowers. A magnificent variety.

To *Pteris Drinkwaterii* (votes, 14 for), from Messrs. Stroud Brothers, 182 Green Lanes, N. The divisions of the fronds are an inch in width and of a bright green colour. A vigorous grower.

To *Acer palmatum linearifolium* (votes, 8 for), from Messrs. J. Veitch & Sons. A pretty Japanese Maple with finely-cut pale green foliage.

To *Pyrus Malus floribunda Scheideckerii* (votes, unanimous), from Messrs. W. Paul & Son, Waltham Cross and Messrs. Paul & Son, Cheshunt. An exceptionally free-flowering, hardy tree. Flowers larger than the type and of a beautiful rose-pink colour.

To *Tulip The Sultan* (votes, 10 for, 8 against), from Messrs. Barr & Son. Colour, very deep maroon.

To *Tulipa saxatilis* (votes, 15 for), from Messrs. Barr & Son. Flowers small, the upper portion of each petal pale rose, the base deep golden yellow.

To *Tulipa vitellina* (votes, 15 for), from Messrs. Barr & Son. A variety with large sulphur-yellow flowers.

To *Rose Mrs. Frank Cant* (votes, unanimous), from Mr. Frank Cant, Colchester. A cross between *Gabriel Luizet* and *Baroness Rothschild*. A vigorous-growing variety, bearing large soft pink flowers.

To *Rhododendron Profusion* (votes, 7 for), from Messrs. Paul & Son. A very handsome, hardy variety. Large rosy-pink flowers borne in dense clusters.

To *Cardamine pratense* fl. pl. *Miss Jekyll* (votes, 11 for), from Messrs. Paul & Son. A very pretty free-flowering semi-double form of a pale lilac colour.

To *Zonal Pelargonium King of Denmark* (votes, 9 for), from Mr. R. Jensen, Chingford. A distinct variety of dwarf habit, bearing large semi-double, pale salmon-pink flowers.

Other Exhibits:—

The Director, Royal Gardens, Kew, sent a group of beautiful and rare *Rhododendrons* and a very fine collection of *Tulips*.

From Professor M. Foster, F.R.S., Cambridge, came a very interesting collection of unnamed seedling *Irises* raised by the exhibitor.

Martin R. Smith, Esq., The Warren, Hayes (gr. Mr. Blick), exhibited specimens of *Malmaison Carnation Nell Gwynne*.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummins), sent *Ismene Amancæs*.

Mr. W. B. Hartland, Cork, exhibited a small group of *Tulips*.

Messrs. Young & Dobinson, Stevenage, Herts, staged a group of hardy flowers.

FLORAL COMMITTEE, MAY 19, 1896.

TEMPLE GARDENS.

W. MARSHALL, Esq., in the Chair, and twenty-three members present.

Awards Recommended:—

First Class Certificate.

To *Buddleia Colvillei* (votes, unanimous), from W. E. Gumbleton, Esq., Belgrove, Queen's Town, Cork. The pretty

tubular-shaped flowers are borne in long racemes ; colour bright rosy-pink, shaded with white in the throat. A very rare shrub.

To *Davallia Truffautiana* (votes, unanimous), from M. M. Linden, Brussels. A handsome species, with long graceful arching fronds. Pinnæ deeply cut, and of a light green colour.

To *Philodendron Devansayanum* (votes, 9 for), from M. M. Linden. A new and distinct ornamental foliage plant of good habit, with ovate, leathery, deep green leaves, one foot across by fifteen inches in length.

To *Platycerium Veitchii* (votes, 7 for), from Messrs. J. Veitch & Sons, Chelsea. A handsome Stag's Horn Fern, with large fronds deeply cut at the apex ; colour pale green.

To *Alsophila atrovirens* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A strong growing variety with massive fronds of a deep green colour ; pinnæ much divided and beautifully crinkled.

To *Phoenix Rœbelenii* (votes, unanimous), from Messrs. F. Sander & Co. A distinct and very graceful Palm. Fronds two feet long ; colour deep green.

To *Calamus ciliaris* (votes, unanimous), from Messrs. F. Sander & Co. A very beautiful Palm with small deep green fronds. A handsome table plant.

To *Anthurium Triumphans* (votes, 8 for), from Messrs. J. Laing & Sons, Forest Hill. A very fine variety. Spathe large, of a soft pink colour.

Award of Merit.

To *Malmaison Carnation Lady Grimston* (votes, unanimous), from Martin R. Smith, Esq., The Warren, Hayes (gr. Mr. Blick). A handsome variety with large flowers. The ground colour is creamy white, flaked with crimson.

To *Malmaison Carnation Lord Rosebery* (votes, unanimous), from Martin R. Smith, Esq. (gr. Mr. Blick). Flowers of good form, and of a deep crimson colour.

To *Border Carnation Mephisto* (votes, 7 for), from Mr. J. Douglas, Edenside, Great Bookham. Flowers large and sweetly scented ; colour deep crimson.

To *Border Carnation Mrs. Eric Hambro* (votes, unanimous), from Mr. J. Douglas. A very large pure white-flowered variety.

To *Clematis Crimson Beauty* (votes, 10 for), from Messrs. G.

Jackman & Son, Woking. A distinct and free-blooming variety. Flowers tubular, colour crimson, shaded with purple.

To *Adiantum lineatum* (votes, unanimous), from M. M. Linden. A new Fern of dwarf habit. Fronds deeply cut, colour bright green with silver veins.

To *Bertonerilla* Mdle. Jean Linden (votes, 5 for), from M. M. Linden. An ornamental foliage plant. Leaves small, silvery grey in the centre, margined with dark green and heavily studded with silvery grey dots.

To *Caladium* Duchess of Teck (votes, 7 for), from Messrs. J. Peed & Sons, West Norwood. A very dwarf-growing variety. Leaves creamy-white, margined with green.

To *Begonia* Queen of Begonias (votes, unanimous), from Mr. J. R. Box, Croydon. Flowers large, double, and of fine form; colour bright orange.

To Hybrid Tea Rose Grand Duc A. de Luxembourg (votes, unanimous), from Messrs. W. Paul & Son, Waltham Cross. A handsome variety, of good form; colour deep rose, tinted with orange.

To *Iris australis* (votes, unanimous), from Messrs. Kelway & Son, Langport. Flowers deep purple. Very distinct.

To Single *Pyrethrum* Golconda (votes, unanimous), from Messrs. Kelway & Son. Flowers of medium size; colour crimson scarlet.

To *Begonia* Souvenir de Jean Bart (votes, 6 for), from Messrs. F. Sander & Co. A distinct variety of the Rex section. Leaves large, the central portion silvery grey with a broad margin of bronzy green and dotted with silvery grey spots.

To *Begonia* Pride of Castlewellan (votes, 5 for), from Messrs. F. Sander & Co. A handsome foliage Begonia, dark green ground heavily blotched with silver.

To *Sonerila* Silver Queen (votes, unanimous), from Messrs. F. Sander & Co. Leaves silvery grey with very fine veinings.

To *Hypericum* Moserianum tricolor (for forcing purposes) (votes, 7 for), from Messrs. F. Sander & Co. A dwarf variety with long arching shoots. Leaves pale green, margined with bright red.

To *Trollius caucasicus* Orange Globe (votes, unanimous), from Mr. M. Prichard, Christchurch, Hants. A magnificent variety with large deep golden yellow flowers.

To *Rhododendron* H. M. Arderne (votes, unanimous), from Messrs. Paul & Son, Cheshunt. A hybrid from R. Fortunei. Flowers pink, tinged with white. Sweetly scented. A distinct and handsome variety.

To *Rhododendron* Helen Paul (votes, unanimous), from Messrs. Paul & Son. Flowers borne in large trusses, colour soft pink margined with rose-pink.

To *Canna* Madame Pichou (votes, 10 for), from Messrs. Paul & Son. A dwarf-growing variety with flowers of medium size, colour yellow, spotted and splashed with crimson.

To *Begonia* Duchess of Fife (votes, unanimous), from Messrs. J. Laing & Sons. Flowers large, single, with deeply serrated margins; colour pale pink. A magnificent variety.

To *Gloxinia* Stanstead Gem (votes, 9 for), from Messrs. J. Laing & Sons. Flowers large, erect; colour deep violet purple, margined with white.

To *Carnation* The Gift (votes, unanimous), from Mr. C. Turner, Slough. Flowers of good form, yellow ground flaked with crimson.

To *Malmaison* *Carnation* Little John (votes, 6 for), from Mr. C. Turner. A magnificent variety with large bright red flowers.

To *Carnation* Loveliness (votes, 9 for), from Mr. C. Turner. A very bold, free-flowering variety. Flowers large, petals smooth, colour soft pink.

To *Carnation* Cardinal Wolsey (votes, unanimous), from Mr. C. Turner. A distinct and beautiful variety. Flowers large, orange yellow ground flaked with crimson scarlet.

To *Gloxinia* Adela (votes, unanimous), from Messrs. J. Veitch & Sons. Flowers of medium size, crimson, margined with white. Throat sulphur yellow spotted with crimson.

To *Phyllocactus* Ovis (votes, unanimous), from Messrs. J. Veitch & Sons. A very handsome variety. Flowers large, colour pale rose-pink.

To *Phyllocactus* Elatior (votes, unanimous) from Messrs. J. Veitch & Sons. Flowers very rich scarlet tinged with purple.

To *Phyllocactus* Ena (votes, unanimous), from Messrs. J. Veitch & Sons. Flowers large, semi-double, orange scarlet with purple edges.

To *Phyllocactus* Eurasian (votes, unanimous), from Messrs.

J. Veitch & Sons. A very fine variety. Flowers large, orange scarlet suffused with magenta-purple.

To Caladium Silver Cloud (votes, 7 for), from Messrs. J. Veitch & Sons. Leaves of medium size, creamy white ground suffused with green and margined with a deeper shade.

To Caladium Sir Julian Goldsmid (votes, 5 for, 4 against), from Messrs. J. Veitch & Sons. Leaves large, the ground white suffused with red and blotched with crimson.

To Caladium Duchess of Connaught (votes, unanimous), from Messrs. J. Veitch & Sons. Leaves of medium size, pale green suffused with pink.

To Azalea mollis hybrid Mons. Desbois (votes, 8 for), from Messrs. J. Veitch & Sons. A very fine improvement on the type. Flowers large, colour bright orange. Very floriferous.

To Azalea Diamond (votes, unanimous), from Messrs. J. Veitch & Sons. A large-flowered hardy variety. Flowers borne in dense clusters, colour blush white, the upper petals blotched with crimson.

Other Exhibits.

J. T. Bennett-Poë, Esq., Holmwood, Cheshunt, staged a group of well-flowered Streptosolen Jamesoni.

From R. Irwin Lynch, Esq., Botanic Garden, Cambridge, came an interesting group of cut flowers.

Mr. A. Rhodes, Swincars, Guisley, Leeds, sent Forget-me-not Princess Victoria.

Mr. T. S. Boulton, 17 Tyrrell Road, East Dulwich, staged a pretty Fern named Pteris Boultoni, which received an Award of Merit on March 10, 1896.

From Mr. G. Stevens, Putney, came two varieties of Carnations.

FLORAL COMMITTEE, JUNE 9, 1896.

W. MARSHALL, Esq., in the Chair, and thirty members present.

Awards Recommended :—

Silver Gilt Flora Medal.

To Messrs. Kelway & Son, Langport, for a magnificent group of hardy flowers consisting of Pæonies, Gaillardias, Delphiniums, Irises, Pyrethrums, and Campanulas.

To Messrs. J. Veitch & Sons, Chelsea, for hardy flowers in great variety, with plants of *Styrax Japonica* and *Syringa japonica* and a fine collection of dwarf-growing Cannas.

To Messrs. Paul & Son, Cheshunt, for a group of hardy flowers—*Pæonies*, *Hemerocallis*, Cannas, Irises, Phloxes and a large collection of Roses.

Silver Flora Medal.

To Lord Aldenham, Aldenham House, Elstree (gr. Mr. Beckett), for a superb collection of *Streptocarpus*.

To Mr. G. Prince, Oxford, for a beautiful collection of Roses.

To Messrs. J. Peed & Sons, West Norwood, for a group of foliage and flowering plants—*Caladiums*, *Bertolonias*, *Crotons*, *Azaleas*, and *Gloxinias*.

To The Guildford Hardy Plant Co., Millmead, Guildford, for a pretty group of hardy plants—*Cypripedium spectabile*, *Saxifragas*, *Heucheras*, *Dianthus*, Ferns, &c.

To Messrs. W. Cutbush & Son, Highgate, for a large group of Malmaison Carnations.

To Messrs. G. Cooling & Sons, Bath, for a group of old-fashioned and other garden Roses.

To Mr. C. Turner, Slough, for a group of Carnations.

To Messrs. Barr & Son, Covent Garden, for hardy flowers.

To Messrs. H. Cannell & Sons, Swanley, for a group of dwarf-growing Cannas.

To Messrs. J. Laing & Sons, Forest Hill, for a group of plants consisting largely of Orchids, *Dracænas*, Palms, *Gloxinias*, and *Aralias*.

Silver Banksian Medal.

To Earl Percy, Syon House, Brentford (gr. Mr. Wythes), for a group of Malmaison Carnations. Plants of dwarf, sturdy habit, with large flowers of great substance.

To A. J. Howard, Esq., Isleworth (gr. Mr. Pentney), for a group of Tree and Border Carnations.

To Messrs. R. Wallace & Co., Colchester, for a group of Irises, *Calochortus*, *Ixias*, and *Liliums*.

To Mr. M. Prichard, Christchurch, for a group of hardy flowers, amongst which were *Pæonies*, Phloxes, Irises, *Campanulas*, and *Liliums*.

To Mr. G. Mount, Canterbury, for a group of Roses.

To Messrs. Hugh Low & Co., Clapton, for a group of dwarf-growing Cannas in great variety.

To Messrs. Dobbie & Co., Rothesay, for a group of herbaceous flowers.

To Mr. B. Ladhams, Southampton, for a very fine group of unnamed seedling Pinks.

To Mr. A. Waterer, Knap Hill, for two boxes of unnamed seedling Rhododendrons.

First Class Certificate.

To *Brodiaea Howelli lilacina* (votes, unanimous), from Messrs. R. Wallace & Co., Colchester. A very pretty, free-flowering hardy bulbous plant. Flowers borne in umbels, colour bluish-lilac tipped with white.

To *Eremurus robustus* (votes, unanimous), from Messrs. J. Veitch & Sons. Flowers borne on spikes 8 to 9 feet in height, the upper half covered with lovely soft pink blooms from 1 to 2 inches in diameter. The plant is hardy, but the young growth is very liable to be killed by frost in early spring, and then the whole plant usually dies.

Award of Merit.

To Border Carnation Nabob (votes, unanimous), from Martin R. Smith, Esq., Hayes Common (gr. Mr. Blick). Flowers large, of good substance; colour pale terra-cotta.

To Border Carnation Her Grace (votes, unanimous), from Martin R. Smith, Esq. Flowers large, of good form, and of a pretty shade of pink.

To Clove-scented Carnation Admiration (votes, unanimous), from the Duke of Marlborough, Blenheim, Woodstock (gr. Mr. Whillans). Flowers very large; colour rich golden yellow.

To *Brodiaea ixioides erecta* (votes, 13 for), from Messrs. R. Wallace & Co. A distinct and handsome variety, with clear golden yellow flowers.

To *Paeony Margaret Attwood* (votes, unanimous), from Messrs. R. Wallace & Co. Flowers semi-double, white with yellow disc.

To *Paeony The Mikado* (votes, unanimous), from Messrs. R. Wallace & Co. A distinct single-flowered variety, with large,

deep rose-coloured flowers with a mass of petaloid anthers in the centre.

To *Pelargonium Persimmon* (votes, unanimous), from Mr. Ladds, Swanley. A sport from *E. Perkins*. Plant of dwarf habit, carrying very large trusses of bright scarlet flowers, the upper petals blotched with crimson.

To *Delphinium Geneva* (votes, unanimous), from Messrs. Kelway & Son, Langport. Flowers semi-double; colour sky-blue, the inner petals mauve.

To *Delphinium Albert Edward* (votes, unanimous), from Messrs. Kelway & Son. Flowers semi-double; colour deep violet blue shaded with purple.

To *Begonia phosphorescens* (votes, 11 for, 1 against), from Messrs. Cutbush & Sons, Highgate. A very dwarf and exceptionally free-flowering tuberous bedding variety. Flowers bright scarlet.

To *Heuchera micrantha* (votes, 17 for, 5 against), from Messrs. W. Cutbush & Sons. A beautiful rock plant bearing long branching spikes, with small blush-coloured flowers.

To *Iris pallida foliis variegatis* (votes, unanimous), from The Guildford Hardy Plant Nursery, Millmead, Guildford. A variegated form, of dwarf habit, with lilac-blue flowers.

To *Canna Austria* (votes, unanimous), from Messrs. J. Veitch & Sons. Flowers deep golden yellow slightly spotted with crimson.

To *Carnation Virgo* (votes, unanimous), from Mr. C. Turner, Slough. Flowers soft yellow tipped and splashed with rosy pink.

To *Carnation Delos* (votes, unanimous), from Mr. C. Turner. Flowers large, well formed; colour crimson scarlet.

To *Carnation Ness* (votes, unanimous), from Mr. C. Turner. A very handsome variety, with large deep crimson flowers.

To *Rosa rugosa* (Roseapples) (votes, 11 for, 1 against), from Messrs. Paul & Son, Cheshunt. Flowers large, semi-double; colour bright rose. Very distinct.

To *Rosa rugosa fimbriata* (votes, 9 for), from Messrs. Paul & Son). A very handsome semi-double variety. Flowers large, blush-pink, with beautifully fimbriated margins.

To *H. P. Rose Royal Scarlet* (votes, unanimous), from Messrs. Paul & Son. Flowers single, clear scarlet.

To *Canna George Paul* (votes, 12 for), from Messrs. Paul &

Son. Plant dwarf habit, with bronzy green foliage, and large orange scarlet flowers.

Cultural Commendation.

To J. T. Bennett-Poë, Esq., Holmwood, Cheshunt, for a very large plant of *Carpenteria californica* covered with blossoms.

Other Exhibits :—

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain), sent a very fine collection of named Pentstemons.

J. T. Bennett-Poë, Esq., Cheshunt, showed specimens of *Linaria macedonica*.

G. Yeld, Esq., Clifton Cottage, York, staged a very nice collection of Seedling Irises and *Hemerocallis*.

From J. P. Morgan, Esq., Roehampton (gr. Mr. McLeod), came three dwarf *Caladiums*.

C. F. Thompson, Esq., Llandaff, Swansea, sent a group of cut flowers.

Mr. Neave, Hampton Court House Gardens, Hampton Court, showed a tree *Carnation* named *Agnes*.

From Mr. J. Douglas, Edenside, Great Bookham, Surrey, came a collection of *Carnations*.

Mr. A. Young, Oxted, Surrey, sent specimens of a *Geranium* named *Louisa Churchill*.

Messrs. W. Balchin & Sons, Hassocks, Sussex, staged *Carnation* Mrs. Kate Balchin and *Posoqueria multiflora*.

Mr. G. Stevens, Putney, sent three Seedling *Carnations*.

From Mr. R. Dean, Ealing, came *Campanulas* and *Antirrhinums*.

FLORAL COMMITTEE, JUNE 23, 1896.

W. MARSHALL, Esq., in the Chair, and seventeen members present.

Awards Recommended :—

Silver Flora Medal.

To H. V. Machin, Esq., Gateford, Worksop, for a beautiful collection of *Roses*.

To Mr. H. Eckford, Wem, Salop, for a very large assortment of *Sweet Peas*.

To Messrs. R. Wallace & Co., Colchester, for a group of flowers consisting of Lilies, Irises, Brodiaëas and a very fine display of Calochorti.

Silver Banksian Medal.

To Messrs. Hugh Low & Co., Clapton, for a group of *Statice profusa* and *S. Butcheri*. Plants of dwarf habit with fine clear foliage and large panicles of flowers.

To Messrs. J. Veitch & Sons, Chelsea, for a group of hardy flowering shrubs, amongst them *Escallonia Philippiana*, a slender-growing variety bearing small white flowers in great profusion, *Andromeda speciosa cassinæfolia* and *Cornus stricta*.

Bronze Flora Medal.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers.

Bronze Banksian Medal.

To Messrs. Young & Dobinson, Stevenage, Herts, for a group of hardy flowers.

First Class Certificate.

To *Astilbe chinensis* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. Bain). A very graceful plant bearing large branching panicles of small blush-pink sweet-scented flowers.

To *Anthurium Lawrenceanum* (votes, unanimous), from Sir Trevor Lawrence, Bart. A superb variety with large pure white spathes.

To *Anthurium Andreanum* Kelly's var. (votes, 5 for), from Messrs. F. Sander & Co., St. Albans. A very fine variety with large salmon-red spathes.

Award of Merit.

To *Carnation Hope* (votes, 7 for, 5 against), from J. Wynne Ffoulkes, Esq., Chester. Plant of good habit with pure white flowers.

To *Asparagus tenuissimus albanensis* (votes, 7 for), from Messrs. F. Sander & Co. A very graceful variety of dwarf habit with long narrow pale green leaves.

To *Geum Heldreichi* (votes, unanimous), from Mr. A. Perry,

Winchmore Hill. Flowers of medium size, colour bright orange red. Very distinct.

To *Canna Italia* (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. A magnificent variety with large deep yellow flowers blotched and streaked with orange red.

To *Calochortus Eldorado*, strain of (votes, unanimous), from Messrs. R. Wallace & Co. A magnificent strain with large flowers of great substance; colours varying from pure white through various shades of pink and salmon to deep purple.

To *Chrysanthemum frutescens nivale compactum* (votes, unanimous), from Mr. H. B. May, Upper Edmonton. A dwarf free-flowering *Marguerite*. Flowers of medium size, pure white, and borne well above the foliage.

To *Iris Kämpferi Chiyo* (votes, 8 for), from Messrs. Barr & Son. Large lavender flowers shaded with blue.

Other Exhibits.

Mrs. North, Avery Hill, Eltham, Kent (gr. Mr. Abbey), sent a new Pansy named Colonel North.

H. Grinling, Esq., Stanmore, sent a well-grown plant of *Gloxinia* Mrs. Grinling with large bright crimson flowers.

From W. G. Soper, Esq., Harestone, Caterham Valley, Surrey, came specimens of *Dimorphotheca Ecklonis*. A very pretty plant bearing sweet-scented *Marguerite*-like flowers; colour white, the under surface of the petals suffused with blue. The Committee asked to see this again, with a note as to its hardiness or the reverse.

Allan Chandler, Esq., Haslemere, sent a *Delphinium* named Ethel Hutchinson.

C. F. Thompson, Esq., Llandaff, Swansea, sent a group of cut flowers.

Mr. John Hazelby, Station Road, Hampton, staged a small group of Ivy-leaved *Pelargoniums*.

From Mr. J. Douglas, Edenside, Great Bookham, came a few choice Carnations.

Messrs. Ivery & Son, Dorking, staged two well-flowered plants of *Clematis Lady Ashcombe*.

Messrs. Dobbie & Co., Rothesay, sent a group of *Antirrhinum* Yellow Queen and Auricula-eyed Sweet Williams.

From Messrs. R. Gibson & Son, Tunstall Road, Sunderland, came a small plant of a *Calceolaria* named *Gloriosa*.

The Sunset Seed & Plant Co., San Francisco, exhibited a new Sweet Pea named Red Riding Hood.

Messrs. J. Laing & Sons, Forest Hill, sent a few Tuberous Begonias.

Mr. A. Perry, Winchmore Hill, staged a small group of hardy flowers.

Messrs. E. Sarjeant & Co., Stratton Vineries, Worthing, sent a very pretty group of Seedling Coleus.

Messrs. J. Peed & Sons, West Norwood, submitted a new Carnation named Miss C. Measures.

Prizes.

Class 4.—Collection of Hardy Flowers, distinct kinds, not less than 18 bunches; open: 1st, £3, Mr. M. Prichard, Christchurch; 2nd, £2, Messrs. Barr & Son, Covent Garden.

Class 5.—Twelve bunches of Hardy Flowers, distinct kinds; amateurs: 1st, £2, Mr. Herrin, Dropmore, Maidenhead; 2nd, £1. 10s., Mr. Sage, Ham House Gardens, Richmond.

Class 6.—Eight bunches of Hardy Flowers, distinct kinds; amateurs: 1st, £1. 10s., Miss Debenham, St. Peter's, St. Albans.

ORCHID COMMITTEE.

JANUARY 14, 1896.

HARRY J. VEITCH, Esq., in the Chair, and twenty-one members present.

Awards Recommended:—

Silver Flora Medal.

To Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), for a remarkable group of Orchids, the centre figure of which was a superb plant of *Lælia Gouldiana*: and among other fine specimens were *Odontoglossum coronarium miniatum*, *Lycaste plana Measuresiana*, *Cypripedium* × *Laurebel*, and a good representative collection of varieties of *Lælia anceps* and species of *Masdevallias*.

To Messrs. F. Sander & Co., St. Albans, for an extensive group of Orchids, including some new hybrid *Cypripediums*.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a fine group of Orchids, chiefly hybrids.

Silver Banksian Medal.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a marvellous specimen of *Lælia Gouldiana* with twenty-five spikes. A cultural award.

To Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. H. Holbrook), for a very fine and interesting collection of *Cypripediums* in fifty varieties, made up of thirty-six hybrids and fourteen species. Also *Lælia* × *Finckeniana* and its reputed parents *L. albida* and *L. anceps Sanderiana*.

To Messrs. B. S. Williams & Son, Upper Holloway, N., for a group of *Cypripediums*, *Calanthes*, &c.

To Messrs. Hugh Low & Co., Clapton, for a group of Orchids.

Bronze Banksian Medal.

To R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), for a group of Orchids in the centre of which was a fine example of *Vanda Amesiana* with ten spikes of flowers.

To Sydney Courtauld, Esq., Bocking Place, Braintree (gr. Mr. A. Wright), for a group of *Masdevallias*.

First Class Certificate.

To *Cattleya Trianæ alba* (votes, unanimous), from Mr. Wm. Bull, King's Road, Chelsea.

To *Phaio-Calanthe* × *Sedenii albiflora* (*P. grandifolius* ♀ × *C. Veitchii* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea.

Award of Merit.

To *Cypripedium* × *Minnie Ames* (*C. Curtisii* ♀ × *C. concolor* ♂) (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. Flowers cream-white, tinged with rose.

To *Cypripedium* × *Calypso*, Stand Hall variety (votes, unanimous), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). A fine variety, nearest to 'Cookson's var.'

To *Lælio-Cattleya* × *Cicero* (*C. intermedia* ♀ × *L.-C. × elegans Turnerii* ♂) (votes, unanimous), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond). The plant resembles



FIG. 6.—‘*CATTLEYA PERCIVALIANA*,’ INGRAM’S VAR. (*Journal of Horticulture*.)

some of the dwarf forms of *L.-C. × Schilleriana*, but has the front lobe of the crimson labellum formed like that of *C. intermedia*.

To *Cattleya Percivaliana*, Ingram’s var. (votes, 9 for, 3

against), from C. L. N. Ingram, Esq., Godalming (gr. Mr. T. W. Bond). (Fig. 6.)

To *Vanda* × *Charlesworthii* (? *V. Bensonii* × *V. cœrulea*) (votes, unanimous), from Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). Flowers rather smaller than *V. cœrulea*, white, slightly veined with lilac.

To *Cypripedium* × *Euryades*, spotted var. (*C.* × *Leeanum* ♀

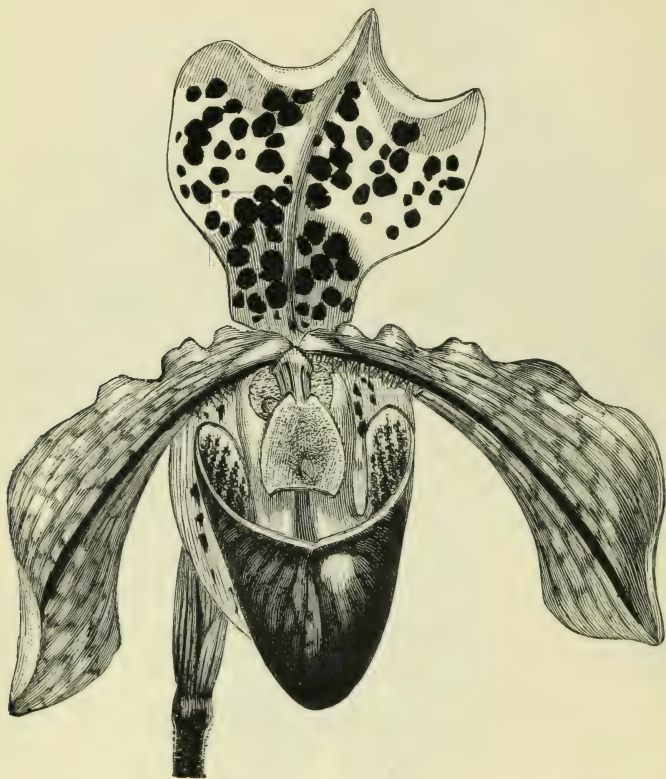


FIG. 7.—*CYPRIPEDIUM* × *EURYADES*. (*Journal of Horticulture*.)

× *C. Boxallii* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. (Fig. 7.)

To *Cypripedium* × *Euryades*, purple variety (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. In this the showy white and purple upper sepal had the colour

suffused over its lower half; in the one previously named the white sepal had distinct purple and brown spots.

To *Cypripedium* × *Schröderæ candidulum* (C. × *Sedenii candidulum* ♀ × *C. caudatum Wallisii* ♂) (votes, 7 for, 1 against), from Messrs. Jas. Veitch & Sons, Chelsea.

Botanical Certificate.

To *Oncidium cheirophorum*, from R. I. Measures, Esq., Camberwell (gr. Mr. H. J. Chapman).

To *Masdevallia polysticta*, and *M. p. purpurea*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Masdevallia striatella*, from Sir Trevor Lawrence, Bart.

To *Masdevallia ludibunda*, from Sir Trevor Lawrence, Bart.

To *Masdevallia abbreviata*, from Sydney Courtauld, Esq., Bocking Place, Braintree (gr. Mr. A. Wright).

To *Masdevallia caloptera*, from Sydney Courtauld, Esq.

To *Lycaste trifoliata*, *Lehmann*, from the Honble. Walter Rothschild (gr. Mr. E. Hill). The species is closely allied to that form of *L. lanipes* known in gardens as *L. Cobbiana*, but it invariably produces three broad plicate leaves to each of the long thin pseudobulbs.

Cultural Commendation.

To Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), for a large specimen of *Lycaste plana Measuresiana*.

To C. B. Powell, Esq., The Old Hall, Southborough, Tunbridge Wells (gr. Mr. Dupont), for a grandly-flowered specimen of *Angræcum sesquipedale*.

To Earl Cowper, Panshanger, Herts (gr. Mr. Jas. Fitt), for a stand of *Calanthe* × *Bella*.

Other Exhibits.

John Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), showed various *Cattleyas* and *Lælias*.

W. C. Walker, Esq., Winchmore Hill (gr. Mr. G. Cragg), showed *Oncidium Cebolleta*.

A. Warburton, Esq., Vine House, Haslingden, sent a hybrid *Cypripedium*, which the Committee pronounced to be *C. × Juno* (*C. callosum* × *C. Fairieanum*).

Messrs. Heath & Son, Cheltenham, sent hybrid *Cypripediums*.

ORCHID COMMITTEE, FEBRUARY 11, 1896.

HARRY J. VEITCH, Esq., in the Chair, and twenty-one members present.

Awards Recommended :—

Silver Flora Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), for a magnificent specimen of the fine blotched *Odontoglossum crispum nobilius*, with seventeen very large and handsome flowers on a spike.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a fine group of Orchids.

To Messrs. F. Sander & Co., St. Albans, for a group of showy Orchids.

Silver Banksian Medal.

To Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. Holbrook), for a large and interesting collection of cut flowers of Orchids.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a group of *Masdevallias*, *Cypripediums*, and hybrid *Dendrobiums*.

To T. Gabriel, Esq., Elmstead, Leigham Court Road, Streatham (gr. Mr. Guyett), for a bank of fine specimens of *Cœlogyne cristata*.

To R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), for a group of *Cypripediums* and other Orchids.

To Messrs. B. S. Williams & Son, Upper Holloway, for a group of *Cypripediums*.

To Messrs. Low & Co., Upper Clapton, for a collection of *Phalænopsis*, &c.

Award of Merit.

To *Masdevallia* × *Shuttryana*, Chamberlain's var. (*M. Shuttleworthii* × *M. Harryana*) (votes, unanimous), from the Right Honble. Joseph Chamberlain, Highbury, Moor Green, Birmingham (gr. Mr. Burberry). This form was raised at Highbury, and its large mauve flowers with yellow tails showed it to be very superior to the original form.

To *Cypripedium villosum* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), and from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman).

To *Houlletia tigrina* (votes, unanimous), from the Honble. Walter Rothschild, Tring Park, Tring (gr. Mr. E. Hill). The specimen shown had two spikes of two and four large flowers respectively.

To *Masdevallia* × *Henrietta* (*M. ignea* × *M. Shuttleworthii*)



FIG. 8.—*CYPRIPEDIUM* × 'JAMES BUCKINGHAM.' (*Journal of Horticulture*.)

(votes, 10 for, 2 against), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A very pretty hybrid of a peculiar Indian yellow tint.

To *Odontoglossum Rossii rubescens* (votes, 11 for, 9 against), from Frau Ida Brandt, Villa Brandt, Riesbach, Zurich.

To *Dendrobium* × *pallens* (votes, unanimous) (*D. Findlayanum* × *D. × Ainsworthii*), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A charming hybrid with ivory-white flowers slightly tinged with pink.

To *Cypripedium* × *James Buckingham* (*C. × enfieldiense* ×

C. bellatulum) (votes, 12 for, 7 against), from A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling). A fine flower of the Chas. Rickman type. (Fig. 8.)

Botanical Certificate.

To *Maxillaria porphyrostele*, from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin.

To *Dendrobium fragrans*, from Messrs. Low & Co., Clapton. A small white species.

To *Dendrobium speciosum*, from Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Geo. Cragg).

Cultural Commendation.

To E. H. Woodall, Esq., St. Nicholas House, Scarborough (gr. Mr. Hughes), for a fine specimen of the orange-coloured *Odontoglossum retusum*.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White) for a splendid specimen of *Pleurothallis Roezlii*, with many racemes of large purple flowers.

Other Exhibits:—

Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. Holbrook), sent a fine specimen of *Cypripedium* × *Leysenianum* (*C. barbatum* Crossii × *C. bellatulum*).

The Right Honble. Joseph Chamberlain (gr. Mr. H. A. Burberry) showed *Dendrobium* × *Andromeda* (*D.* × *Cassiope* × *D.* × *Leechianum*). A pretty hybrid, like a large *D.* × *Cassiope*, raised at Highbury, Birmingham.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson) showed several rare *Cypripediums*.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling), sent *Cypripedium* × *Annie Ayling* (*C. Curtisii* × *C. concolor*), and *C.* × *Mrs. Fred Hardy* (*C. superbiens* × *C. bellatulum*).

Messrs. Heath & Son, Cheltenham, showed *Phalænopsis* × *Veitchiana* (*P. Schilleriana* × *P. rosea*) which first appeared as a natural hybrid and has now been verified by artificial hybridisation. Messrs. Heath also showed *Cattleya Trianae Ernestii* and *Phalænopsis Schilleriana*.

A. H. Milton, Esq., Clifton (gr. Mr. Murrell) showed *Dendrobium Wardianum* and *D. W. album* growing together as imported.

Major Mason, The Firs, Warwick, showed varieties of *Cattleya Trianae*.

ORCHID COMMITTEE, MARCH 10, 1896.

HARRY J. VEITCH, Esq., in the Chair, and sixteen members present.

Awards Recommended:—*Silver Flora Medal.*

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for an extensive group of rare Orchids in flower.

To Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), for a fine display of Dendrobiums in bloom.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a very fine group of Orchids.

Silver Banksian Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine) for hybrid *Calanthes*, *Odontoglossum Pescatorei Veitchiana* O. *crispum* Rex, *O. coronarium*, &c.

To Mr. James Cypher, Cheltenham, for a group of finely-bloomed Dendrobiums.

To W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. Robins) for a group of Orchids.

To Chas. Winn, Esq., The Uplands, Selly Hill, Birmingham (gr. Mr. Armstrong), for a collection of Dendrobiums, chiefly hybrids.

To Messrs. Low & Co., Clapton, for a group of Orchids.

To Messrs. F. Sander & Co., St. Albans, for a group of Orchids.

First Class Certificate.

To *Cymbidium* × *Lowio-eburneum* (*C. eburneum* ♀ × *C. Lowianum* ♂) (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). This is the reverse cross to *C. × eburneo-Lowianum*, plants of which were also shown. The present hybrid had ivory-white flowers with clear purple markings on the lip.

To *Epidendrum* × *elegantulum* (*E. × Endresio-Wallisii* ♂ × *E. Wallisii* ♀) (votes, unanimous), from Messrs. Jas. Veitch & Son, King's Road, Chelsea. This pretty hybrid is in habit like a

dwarf E. Wallisii, and its flowers are equally large. Sepals and petals whitish at base, the rest yellow closely freckled with purple-



FIG. 9.—EPIDENDRUM \times ELEGANTULUM. (*Gardeners' Chronicle*.)

brown. Lip white, yellow at base, and with a few rose spots on the blade. (Fig. 9.)

To *Odontoglossum crispum* *Arthurianum* (votes, 10 for, 1 against), from W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. Robins). A finely-spotted form of the *O. crispum* *apiatum* class. (Fig. 10.)

To *Miltonia* \times *Bleui aurea* (votes, unanimous), from Mr.

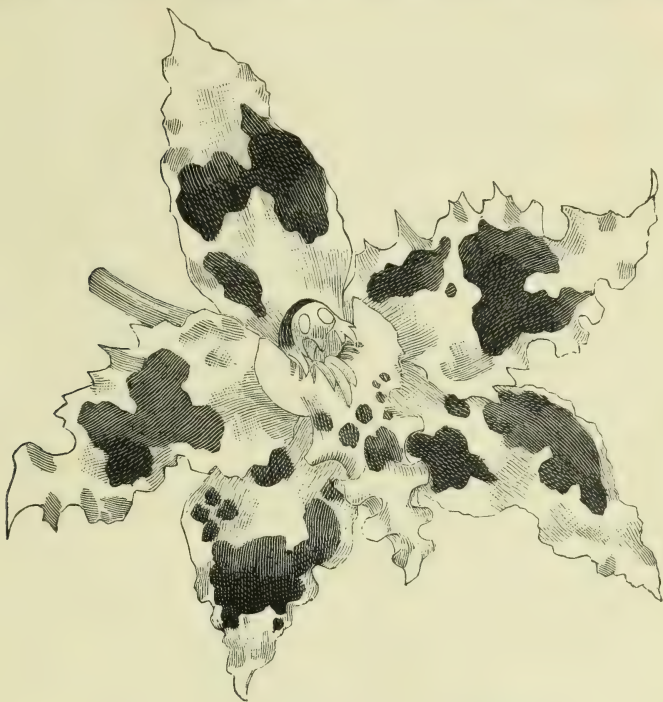


FIG. 10.—*ODONTOGLOSSUM CRISPUM ARTHURIANUM*.
(*Journal of Horticulture*.)

A. A. Peeters, St. Gilles, Brussels. A large flower with some clear yellow markings at the base of the lip.

Award of Merit.

To *Zygopetalum Perrenondii* (*Z. intermedium* \times *Z. maxillare* *Gautierii*) (votes, unanimous), from Mr. A. A. Peeters, Brussels. A fine hybrid with greenish sepals and petals, barred with brown, and large violet-blue lip.

To *Dendrobium* \times *Specio-Kingianum* (*D. speciosum* \times *D.*

Kingianum) (votes, unanimous), from Sir Trevor Lawrence, Bart. Burford, Dorking (gr. Mr. W. H. White). A pretty plant, resembling a very large *D. Kingianum albidum*.

To *Dendrobium* × *Clio* (*D.* × *splendidissimum grandiflorum* × *D. Wardianum*) (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). This resembled a very large *D.* × *Schneiderianum*.

To *Lælio-Cattleya* × *Doris* (*L. harpophylla* ♀ × *C. Trianæ* ♂) (votes, unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr. Mr. Wm. Murray). Flowers like *L.* × *vitellina*, Indian yellow, with purple band on the lip.

To *Dendrobium* × *Doris* (*D.* × *Ainsworthii* *Leechianum* ♀ × *D. moniliforme* ♂) (votes, unanimous), from Norman C. Cookson, Esq. Flowers of *D.* × *Cassiope* class, but larger.

To *Dendrobium* × *Kenneth* (*D. Bensoniæ* ♀ × *D. McCarthiæ* ♂) (votes, unanimous), from Norman C. Cookson, Esq. Flowers white with a maroon and yellow base.

To *Dendrobium* × *Dulce*, Oakwood var. (votes, 8 for, 7 against) (*D. aureum* × *D. Linawianum*). A pretty hybrid like a clear pink-tinted *D.* × *Ainsworthii*.

To *Dendrobium* × *Cassiope virginale* (votes, 7 for, 3 against), from Norman C. Cookson, Esq. A large and clear white form, with light purple base to the lip.

To *Lælio-Cattleya* × *Doris*, var. *Xantho* (*L. harpophylla* ♂ × *C. Trianæ* ♀) (votes, unanimous), from Messrs. Jas. Veitch & Sons. This is the reverse cross of Mr. Cookson's *L.-C.* × *Doris*, which it resembled, except that it had yellower flowers, and the purple marks on the lip were very obscure.

To *Cattleya Trianæ* *Crawshayana* (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke). A very large form, with glowing ruby-red labellum.

Botanical Certificate.

To *Dendrobium glomeriflorum*, from Messrs. F. Sander & Co., St. Albans.

To *Dendrobium Kingianum*, from C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan).

To *Dendrobium velutinum*, from W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. Robins).

Cultural Commendation.

To Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. W. H. Young), for a noble plant of a fine variety of *Miltonia Roezlii*, with twenty-eight flowers, some of the spikes bearing five blooms.

To C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), for a fine specimen of *Dendrobium Kingianum*.

To Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), for a grand plant of *Cœlogyne cristata alba*.

Other Exhibits.

Elijah Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook) showed *Dendrobium* × *Findlayano-Wardianum*.

The Honble. Walter Rothschild, Tring Park, Tring (gr. Mr. E. Hill), showed *Cypripedium* × *Morgania*.

J. W. Arkle, Esq., Holly Mount, Derby, sent *Cattleya Trianæ Arkleana*.

C. J. Crosfield, Esq., Gledhill, Sefton Park, Liverpool (gr. Mr. Thos. Barkley), showed *Cattleya Trianæ alba*, var. *Mrs. C. J. Crosfield*.

Mr. A. A. Peeters, Brussels, showed several forms of *Miltonia* × *Bleni*.

R. I. Measures, Esq., Cambridge Lodge, Camberwell, showed *Cypripedium* × *Woottonii* (*C. callosum* × *C. bellatulum*), and *C. × Winnianum* (*C. Druryi* × *C. villosum*).

The Honble. Mrs. Pakenham, Fordingbridge (gr. Mr. A. Church), sent varieties of *Cattleya Trianæ*.

Mr. Wm. Bull, Chelsea, showed *Lycaste Skinnerii alba* and *Cattleya Trianæ Gemna*.

E. de Q. Quincey, Esq., Oakwood, Chislehurst, showed *Cattleya Trianæ*, Quincey's var.

A. Warburton, Esq., Vine House, Haslingden, sent *Dendrobium nobile*.

Pantia Ralli, Esq., Oatlands Park, Surrey, showed *Sobralia* species and two *Odontoglossums*.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent *Oncidium saltabundum*.

G. W. Rowe, Esq., Claremont Drive, Timperley, sent *Dendrobium nobile Amesia*.

ORCHID COMMITTEE, MARCH 24, 1896.

HARRY J. VEITCH, Esq., in the Chair, and sixteen members present.

Awards Recommended :—*Silver Flora Medal.*

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a fine group of Orchids in flower.

To Fred. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. T. Stafford), for a group of Dendrobiums.

To Messrs. Low & Co., Clapton, for a group of Orchids.

To H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. R. Aldous), for a fine group of Orchids.

To Mr. Wm. Bull, King's Road, Chelsea, for a group of Orchids.

Silver Banksian Medal.

To Messrs. F. Sander & Co., St. Albans, for a group of Orchids in flower.

To Messrs. Charlesworth & Co., Heaton, Bradford, for a collection of Orchids in flower.

First Class Certificate.

To *Odontoglossum* × *excellens*, Rosslyn var. (votes, unanimous), from H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. R. Aldous). A noble flower, fine in shape and colour, and otherwise interesting, as it is the plant on which the supposition of the natural hybrid origin of the species was proved; it being raised from seed by Messrs. Jas. Veitch & Sons.

Award of Merit.

To *Odontoglossum crispum* *Evelina* (votes, unanimous), from Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). A handsome form with clear white flowers evenly blotched with purple-brown, after the manner of *O. c. leopardinum*, which this excels in size and shape.

To *Dendrobium* × *dulce* *picturatum* (votes, unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr. Mr. Wm. Murray). A remarkable bizarre, or striped form of the *D. × dulce* exhibited at the last meeting.

To *Dendrobium* × *Murrayii* (*D. albo-sanguineum* ♀ × *D. nobile* ♂) (votes, unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Wm. Murray). This is the reverse cross to that originally named *D. × Murrayii*, but practically the same. Flowers large, pure white, with purple disc. Stems thick, like *D. albo-sanguineum*, though growing like *D. nobile*.

To *Odontoglossum* × *Coradinei*, Rosefield var. (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke). One of the best and largest of its class.

To *Odontoglossum* × *Humeanum excellens* (votes, unanimous), from H. Mason, Esq., Bankfield, Shipley, Yorks. A large and richly coloured variety.

To *Odontoglossum* × *Ruckerianum*, Mason's var. (votes, unanimous), from H. Mason, Esq., Bankfield, Shipley, Yorks. A fine form, with flowers prettily spotted with purple and tinged with rose.

To *Cattleya Schröderæ caloglossa* (votes, unanimous), from Messrs. Jas. Veitch & Sons, Chelsea. This form has the usual light-coloured flowers, but the lip is rich crimson with broad blush-white margin.

To *Cattleya Trianae* 'Reine des Belges' (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A magnificent variety, with large flowers, the lip being broad and finely fringed; in colour, violet-tinted crimson with lavender margin.

To *Odontoglossum* × *Wilckeanum Cooksonii* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A very large form with broad bands of brown on the yellow segments.

To *Cypripedium hirsutissimum* Stand Hall var. (votes, 8 for, 1 against), from Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson).

Botanical Certificate.

To *Maxillaria lepidota* (votes, unanimous), from Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton).

Cultural Commendation.

To Welbore S. Ellis, Esq., Hazelbourne, Dorking, for a plant of *Odontoglossum crispum* with a branched inflorescence bearing sixty-five flowers.

To H. Mason, Esq., Bankfield, Shipley, Yorks, for *Odontoglossum* × *Humeanum* *excellens*.

To Fred. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. T. Stafford), for a finely flowered specimen of *Dendrobium* × *Schneiderianum*.

To H. T. Pitt, Esq. (gr. Mr. Aldous), for a fine specimen of *Odontoglossum* × *Willekeanum* with nineteen flowers.

Other Exhibits.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), sent *Cypripedium* × *Woottonii* (*C. callosum* × *C. bellatulum*), and *C.* × *Olenus*.

J. Hawthorn Kitson, Esq., Elmet Hall, Leeds, showed *Odontoglossum* × *Andersonianum* *Kitsonii* fine in form and marking.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), exhibited *Cattleya* *Lawrenceanum* × *Mendelii* which the Committee decided was *C.* × *Wm. Murray* previously shown by Norman C. Cookson, Esq.

Messrs. Garraway & Co., Durdham Down, Bristol, sent an Orchid resembling *Aërides* *crispum* *Warnerii* but with white flowers showing traces of abnormal development.

Mr. H. A. Tracy, Amyand Park, Twickenham, showed *Dendrobium* *Devonianum*, *Phalænopsis* *Stuartiana* and *Eria* sp.

Pantia Ralli, Esq., Ashted Park, Surrey, showed *Phaius* *Manni*.

J. T. Gabriel, Esq. (gr. Mr. E. Ranson), showed a large flowered *Dendrobium* *Wardianum*.

ORCHID COMMITTEE, APRIL 7, 1896.

HARRY J. VEITCH, Esq., in the Chair, and fourteen members present.

Awards Recommended :—

Silver Flora Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), for a collection of rare Orchids.

To Messrs. Jas. Veitch & Son, King's Road, Chelsea, for a very fine group of Orchids.

To Messrs. Hugh Low & Co., Clapton, for an extensive group of Dendrobiums, Cattleyas, &c.

Silver Banksian Medal.

To Mr. McArthur, Maida Vale, for a group of Orchids, in which was *Platyclinis glumacea* with 300 flower spikes.

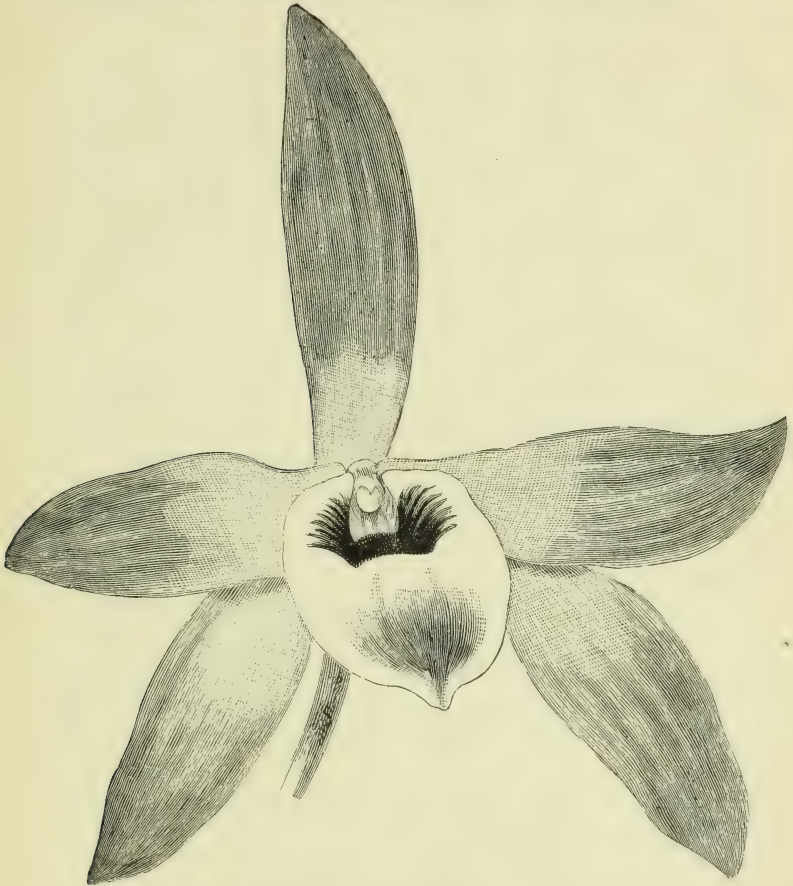


FIG. 11.—DENDROBIUM \times CLIO, TYNTESFIELD VAR. (*Journal of Horticulture*.)

To Messrs. F. Sander & Co., St. Albans, for a group of Orchids.

To W. Thompson, Esq., Walton Grange, Stone, Staffs (gr. Mr. W. Stevens), for a collection of Odontoglossums.

To Messrs. Linden, l'Horticulture Internationale, Parc Léopold, Brussels, for a group of *Odontoglossums*.

To Mr. Gülzow, Bexley Heath, for a collection of *Cattleyas*, &c., in which was a very fine *C. Trianae alba*.

To Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Geo. Cragg), for a good group of *Orchids*.

First Class Certificate.

To *Dendrobium* × *Clio*, Tyntesfield variety (*D.* × *splendissimum grandiflorum* ♀ × *D. Wardianum* ♂) (votes, unanimous), from Fred Hardy, Esq., Ashton-on-Mersey (gr. Mr. T. Stafford). A very fine hybrid with an affinity to *D. Wardianum* in the rich colour of the flower. The segments were ovate-oblong, nearly equal, rich purple-crimson with white margin. The lip coloured like *D. Wardianum*, but in form narrower and longer. (Fig. 11.)

To *Cypripedium Exul*, Joicey's variety (votes, unanimous), from Major Joicey, Sunningdale Park, Sunningdale, Berks (gr. Mr. Fred J. Thorne). A very large and handsome variety in which the upper and lower sepals and the petals were heavily tipped with pure white.

To *Diacrium bicornutum* (votes, unanimous), from Major Joicey, Sunningdale Park.

Award of Merit.

To *Laelio-Cattleya* × *highburyensis* (*Cattleya Lawrenceana* ♀ × *L. cinnabarina* ♂) (votes, unanimous), from the Right Honble. Joseph Chamberlain, Highbury, Moor Green, Birmingham (gr. Mr. H. A. Burberry). A pretty hybrid with flowers of a reddish yellow hue tinged and veined with purple. In form resembling *L. × Latona*.

To *Cattleya* × *Lawre-Mossiae* (*Cattleya Lawrenceana* ♀ × *C. Mossiae* ♂) (votes, unanimous), from R. Brooman-White, Esq., Arddarroch, Garelochhead (gr. Mr. Roberts). In form and colour like *C. Lawrenceana*, but with larger lip.

To *Laelio-Cattleya* × *Sir Wm. Ingram* (*Cattleya aurea* × *L. purpurata*) (votes, unanimous), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond). The flower resembled a richly coloured *L.-C. eximia*, but the petals showed traces of yellow.

To *Cattleya* × *Wm. Murray*, var. *fulgens* (*C. Lawrenceana* ♀ × *C. Mendelii* ♂) (votes, unanimous), from C. L. N. Ingram, Esq., Godalming (gr. Mr. T. W. Bond). A very rich crimson purple variety.

To *Stanhopea Wardii* *superba* (votes, unanimous), from the Honble. Walter Rothschild, Tring Park, Tring (gr. Mr. E. Hill). A very handsome yellow variety spotted with purple, with large maroon blotches at the base of the lip.

To *Odontoglossum* × *spectabile* (votes, unanimous), from Messrs. Linden, l'Horticulture Internationale, Parc Léopold, Brussels. A form of *O.* × *excellens*.

Botanical Certificate.

To *Eriopsis rutidobulbon*, from the Honble. Walter Rothschild (gr. Mr. E. Hill).

To *Chondrorhyncha fimbriata*, from J. T. Gabriel, Esq., Streatham Hill.

Cultural Commendation.

To Mr. McArthur, Maida Vale, for *Platyclinis glumacea*, with about 300 flower spikes.

To Walter Cobb, Esq., Tunbridge Wells (gr. Mr. Howes), for *Odontoglossum luteo-purpureum* var.

To W. Thompson, Esq., Stone, Staffordshire (gr. Mr. W. Stevens), for *Odontoglossum triumphans*, with fine branched spike of many flowers.

To Major Joicey (gr. Mr. Fred J. Thorne), for *Dendrobium atroviolaceum* with several spikes.

To J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), for *Dendrobium thyrsiflorum* with over thirty flower-spikes.

Other Exhibits:—

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummins) showed *Cymbidium Lowianum viride*.

Mr. H. A. Tracy, Amyand Park Road, Twickenham, showed a fine form of *Cymbidium Lowianum*.

R. I. Measures, Esq., Camberwell (gr. Mr. H. J. Chapman), sent *Cypripedium* × *Quies* (*C. Hookeræ* ♀ × *C. Curtisii* ♂) and *Dendrobium albo-sanguineum*.

Charles Young, Esq., The Thorns, Sevenoaks (gr. Mr. Ryder), sent *Cattleya Schröderæ*.

Mr. J. W. Moore, Eldon Nursery, Bradford; Thos. Statter, Esq., and T. B. Haywood, Esq., showed *Dendrobium Hildebrandii album*.

Fred Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. T. Stafford), showed *Dendrobium* \times *Clio album*, *D.* \times *Venus*, and *D. Falconerii gigantum*.

ORCHID COMMITTEE, APRIL 21, 1896.

HARRY J. VEITCH, Esq., in the Chair, and fifteen members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a very fine group of rare Orchids in flower.

Silver Banksian Medal.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a fine collection of Orchids, including some large specimens of *Masdevallia Arminii*, *M. caudata*, &c., covered with flowers.

To Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), for a group of *Odontoglossums*, &c.

To R. Brooman-White, Esq., Arddarroch, Garelochhead (gr. Mr. Roberts), for three dozen fine cut spikes of varieties of *Odontoglossum crispum* and *O. Andersonianum*.

To H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), for a fine group of Orchids.

First Class Certificate.

To *Epidendrum* \times *Endresio-Wallisii superbum* (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. This had the sepals and petals of a purple colour tipped with white. Lip violet and white.

Award of Merit.

To *Dendrobium* × *Wiganiæ* (*D. nobile* ♀ × *D. signatum* ♂) (votes, unanimous), from Sir Trevor Lawrence, Bart., and Messrs. Jas. Veitch & Sons. This pretty hybrid was first raised in the gardens of Sir Frederick Wigan, who previously exhibited an immature plant. Flowers somewhat resembling those of *D. Hildebrandii*; cream-white or sulphur-yellow with maroon disc to the lip.

To *Cypripedium* × *Schofieldianum* (*C. hirsutissimum* ♀ × *C. bellatulum* ♂) (votes, unanimous), from G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester (gr. Mr. Shill). Resembling *C. × Olenus* but with larger petals, cream-white, spotted purple.

To *Cattleya Schröderæ eximia* (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea. A distinct pink variety with rose purple base to the lip, in which also appeared a glow of dark orange.

To *Vanda Parishii Marriottiana* (votes, unanimous), from H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous). The rose-purple form of the type.

To *Odontoglossum crispum*, *Arddarroch* variety (votes, unanimous), from R. Brooman-White, Esq., Arddarroch, Garelochhead (gr. Mr. Roberts). A finely-blotched variety of the *O. c. apiatum* class.

To *Odontoglossum Andersonianum candidum* (votes, unanimous), from R. Brooman-White, Esq. (gr. Mr. Roberts). A peculiar white unspotted variety.

To *Odontoglossum Andersonianum*, *Arddarroch* variety (votes, unanimous), from R. Brooman-White, Esq. (gr. Mr. Roberts). A singular variety with cream-white flowers spotted uniformly with red-brown over their whole surface.

Botanical Certificate.

To *Dendrobium carinatum*, from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin.

To *Epidendrum arachnoglossum*, from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White).

To *Sarcochilus Hartmanni*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Angræcum metallicum* from Messrs. Jas. Veitch & Sons, Chelsea.

Cultural Commendation.

To Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), for *Cymbidium tigrinum* and *Dendrobium capillipes*.

Other Exhibits.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent some fine *Odontoglossums*.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), showed two fine forms of *Odontoglossum Andersonianum*.

Mr. Jas. Douglas, Great Bookham, Surrey, showed *Phaius* × *Cooksonii*.

Mrs. Briggs, Bury Bank House, Accrington, sent *Dendrobium Devonianum*.

W. G. Ledger, Esq., Wilton Road, Wimbledon, sent *Dendrobium linguæforme*.

F. M. Burton, Esq., Highfield, Gainsborough, showed *Cypripedium* × *highfieldense* (said to be *C. Druryi* ♂ × *C. Lawrenceanum* ♀), but in which no trace of *C. Druryi* appeared.

J. Bradshaw, Esq., Southgate (gr. Mr. Whiffen), showed *Cattleya Mossiæ*.

Messrs. F. Sander & Co., St. Albans, sent a group of Orchids.

Mr. Gülzow, Bexley Heath, staged a group of Orchids.

Malcolm S. Cooke, Esq., Kingston Hill, exhibited a group of Orchids.

Messrs. Hugh Low & Co., Clapton, exhibited a group of Orchids.

ORCHID COMMITTEE, MAY 5, 1896.

HARRY J. VEITCH, Esq., in the Chair, and fourteen members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a magnificent group of Orchids, the centre of which was composed of numerous varieties of *Cattleya Schröderæ*.

Silver Flora Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), for a group of choice Orchids.

Silver Banksian Medal.

To J. T. Bennett Poë, Esq., Holmwood, Cheshunt, for a stand of fifteen finely-flowered plants of *Cattleya citrina*.

To Sir Weetman Pearson, Bart., M.P., Paddockhurst, Crawley (gr. Mr. Capp), for a group of Orchids made up of three fine specimens of *Cattleya Lawrenceana*, some well-grown *Dendrobium nobile*, and *Cattleya Schrödera*.

To Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), for a group of *Odontoglossums*.

To R. Brooman-White, Esq., Arddarroch, Garelochhead (gr. Mr. Roberts), for a collection of *Odontoglossums*.

To J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), for a group of Orchids.

First Class Certificate.

To *Vanda teres gigantea* (votes, unanimous), from Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine). A well-marked and constant variety; very strong in growth, and bearing stout spikes of flowers, much larger than the type, and very fine in colour.

Award of Merit.

To *Dendrobium thysiflorum Lowii* (votes, unanimous), from Baron Schröder (gr. Mr. H. Ballantine). The flowers are wholly cream white with the exception of an orange streak on the lip, which is spoon-shaped and narrow. It may be classed with that form of *D. thysiflorum* figured in the "Lindenia" as *D. Gallianum*.

To *Chysis* × *langleyensis* (*C.* × *Chelsoni* × *C. bractescens*), (votes, unanimous), from Messrs. Jas. Veitch & Sons, King's Road, Chelsea, S.W. A fine hybrid with flowers like *C. bractescens*, but with the segments tipped with rose colour.

To *Lælio-Cattleya* × *Eudora* (*L. purpurata* ♀ × *C. Mendelii* ♂) (votes, 6 for, 4 against), from C. L. N. Ingram, Esq., Elstead House, Godalming. This bears much resemblance to *L.-C.* × *eximia*, but as shown was smaller.

To *Odontoglossum crispum* "Princess" (votes, unanimous), from W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. W. H. Robbins). A fine flower in every respect; the sepals each bearing one large irregular blotch, and all the segments being marked with purple at the back.

To *Miltonia Roezlii* album, "Cobb's" var. (votes, unanimous), from Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howes). A very large form without the purple markings of the type.

To *Odontoglossum Hallii* grandiflorum (votes, unanimous), from C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan). A very large form of the *O. H. xanthoglossum* class.

To *Lælia purpurata*, "Grimston" var. (votes, unanimous), from T. Fielden, Esq., Grimston Park, Tadcaster (gr. Mr. Clayton). A large variety with very fine dark lip.

Botanical Certificate.

To *Bulbophyllum tremulum*, from C. J. Lucas, Esq. (gr. Mr. Duncan). A curious little species with the feathery lip of *B. barbigerum*. Imported from Koorg, India.

To *Catasetum macrocarpum*, from the Honble. Walter Rothschild, Tring Park, Tring (gr. Mr. E. Hill).

To *Stenoglottis longifolia*, from Messrs. F. Sander & Co., St. Albans.

To *Eria bractescens*, from Messrs. F. Sander & Co.

To *Catasetum stupendum*, from Sir Weetman Pearson, Bart., M.P., Paddockhurst, Crawley (gr. Mr. Capp).

Cultural Commendation.

To E. H. Adcock, Esq., Ribblesdale, Dorking (gr. Mr. J. Green), for a single plant of *Cypripedium bellatulum* with ten flowers.

To C. Young, Esq., The Thorns, Sevenoaks (gr. Mr. S. J. Ryder), for *Odontoglossum polyxanthum*, with a six-branched spike of twenty-seven flowers.

Other Exhibits.

W. A. Bevan, Esq., Coombe Court, Kingston, sent a finely spotted *Odontoglossum Pescatorei*.

J. Forster Alcock, Esq., Northchurch, Berkhamsted, sent *Lacæna bicolor* and *Cattleya citrina*.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent *Oncidium varicosum Rogersii*, with very fine bulbs and a very strong inflorescence.

Messrs. F. Sander & Co. staged an effective group of Orchids.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed *Lælio-Cattleya* × *highburyensis*.

Messrs. W. S. Lewis & Co., Southgate, sent *Odontoglossum Pescatorei Lewisii* and other Orchids.

ORCHID COMMITTEE, MAY 19, 1896.

TEMPLE SHOW.

HARRY J. VEITCH, Esq., in the Chair, and twenty-one members present.

Awards Recommended :—

First Class Certificate.

To *Odontoglossum crispum augustum* (votes, 11 for, 5 against), from Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels. A very fine dark purple blotched variety resembling *O. c. Frantz Masereel*, but an improvement on it in every way. This plant was sold during the show for 350 guineas. (Fig. 12.)

To *Cattleya Mossiæ Arnoldiana*, Low's var. (votes, unanimous), from Messrs. Hugh Low & Co., Clapton. A very large white *Mossiæ*, with pure pink feather on each petal, and with purple veining on the lip.

To *Cattleya Luddemanniana Ernestii* (votes, unanimous), from H. S. Leon, Esq., Bletchley Park, Bletchley (gr. Mr. A. Hislop). This is the finest and darkest-coloured form of the plant, known in gardens as *Cattleya Speciosissima*.

To *Lælia purpurata Lewisii* (votes, 12 for, 6 against) from Messrs. W. L. Lewis & Co., Southgate, N. This is the nearest approach to a wholly white *L. purpurata*, there being no colour, even in the labellum, other than an obscure yellow tint and some very fine dark lines at the base of the lip.

Award of Merit.

To *Lælia purpurata* 'Arthur Wigan' (votes, unanimous),

from Sir Frederick Wigan, Clare Lawn, East Sheen, Richmond (gr. Mr. W. H. Young). A rose-tinted variety of the L. p. Russelliana class.

To *Oncidium varicosum giganteum* (votes, unanimous), from Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. W. H. Young). The largest and best *O. varicosum* which has yet appeared.

To *Odontoglossum crispum* 'Victoria Ellis' (votes, unani-



FIG. 12.—*ODONTOGLOSSUM CRISPUM AUGUSTUM*. (*Gardeners' Chronicle*.)

mous), from Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton). A very handsome variety of the *O. c. guttatum* section.

To *Cypripedium* × *Cowleyanum* Anna Louise (*C. Curtisii* ♀ × *C. niveum* ♀) (votes, unanimous), from G. W. Law-Schofield,

Esq., New-Hall-Hey, Rawtenstall, Manchester (gr. Mr. Shill). A fine hybrid with large white flowers, the petals and face of the labellum tinged with rose, and the petals and upper sepal spotted purple.

To *Cattleya Mossiæ* 'Beatrice' (votes, unanimous), from Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. W. H. Young). This was a large and richly coloured variety.

To *Cattleya Mossiæ* 'Chas. Ingram' (votes, unanimous), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond). A very large and finely formed flower with blush-white sepals and petals, and lip with bright yellow throat, and purple-crimson marking on the front.

To *Odontoglossum crispum* Lowiæ (votes, unanimous), from Messrs. Hugh Low & Co., Clapton. This was a heavily blotched variety of the *O. c. apiatum* class, but with smaller flowers.

To *Odontoglossum* \times *expansum* (votes, 12 for, 5 against), from M. Jules Hye-Leysen, Coupure, Ghent. A pretty flower, evidently of hybrid origin, with much resemblance to *O. crispum leopardinum*, but with lip and crest of *O. x Wilckeanum albens*.

To *Miltonia vexillaria* Coeneana (votes, unanimous), from M. Jules Hye-Leysen. A large form with rose-pink flowers having some radiating crimson lines on the white base of the lip.

To *Cypripedium* \times *gigas* Corndeanii (votes, 11 for, 6 against), from T. W. Swinburne, Esq., Corndean Hall, Winchcombe. This plant on this, as on a former occasion, was exhibited as *C. x Corndeanii* with a reputed parentage *C. Lawrenceanum* φ \times *C. x Sedenii* σ . It was considered to be identical with a form of *C. x gigas* (*C. Lawrenceanum* φ \times *C. Harrisianum* σ), and the award was made on condition that the erroneous record was abolished and the suggested one adopted.

Botanical Certificate.

To *Epidendrum hastatum*, from Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. W. H. Young).

To *Mieracyllium gemma* from Messrs. F. Sander & Co., St. Albans.

Cultural Commendation.

To His Grace the Duke of Sutherland, Trentham (gr. Mr. P. Blair), for *Odontoglossum crispum*, bearing six spikes of flowers.

Special Awards by the Council for Orchids :—

Gold Medal.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr W. H. White).

Silver Cup.

To H. S. Leon, Esq., M.P., Bletchley Park, Bucks (gr. Mr A. Hislop).

To Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr W. H. Young).

To Messrs. Hugh Low & Co., Upper Clapton, N.E.

To Messrs. Charlesworth & Co., Heaton, Bradford.

To Messrs. Backhouse & Son, York.

To Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr Masterton).

Silver Gilt Flora Medal.

To Mr. James Cypher, Queen's Road, Cheltenham.

To J. Gurney Fowler, Esq., Glebelands, Woodford.

To Major Joicey, Sunningdale Park, Berks (gr. Mr. Thorne).

To Earl Percy, Syon House, Brentford (gr. Mr. G. Wythes).

To Messrs. B. S. Williams & Son, Upper Holloway, N.

ORCHID COMMITTEE, JUNE 9, 1896.

HARRY J. VEITCH, Esq., in the Chair, and fifteen members present.

Awards Recommended :—

Silver Flora Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. H. Ballantine), for a group of rare Orchids, including *Lælio-Cattleya* × *eximia*, *L.-C.* × *Canhamiana*, *Cypripedium Stonei* *platytanum*, *Sobralia xantholeuca*, *S. macrantha* *Kienastiana*, some noble forms of *Odontoglossum crispum*, &c.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a very fine and well-arranged group of Orchids.

To Messrs. F. Sander & Co., St. Albans, for an extensive group of Orchids.

To H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), for an excellent group of Orchids.

To Messrs. Hugh Low & Co., Clapton, for a very fine group of *Cattleya Mossiæ* and other showy Orchids.

Silver Banksian Medal.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a very interesting group, in which were many rare specimens of *Masdevallias*, *Epidendrum Brassavola*, *E. prismatocarpum*, *Luisia Amesiana*, *Lælio-Cattleya* × *Arnoldiana*, &c.

To Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), for a collection of well-grown *Odontoglossum crispum*.

To Messrs. B. S. Williams & Son, Upper Holloway, N., for a group of Orchids.

Bronze Banksian Medal.

To Messrs. W. L. Lewis & Co., Southgate, for a group of Orchids.

First Class Certificate.

To *Miltonia vexillaria* 'Memoria G. D. Owen' (votes, unanimous), from Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. W. H. Young). A noble variety and the best of that section which includes *M. v. superba* and *M. v. Leopoldii*. Flowers light magenta, the base of the lip being decorated with a broad triangular blotch of several merging lines of dark blood-red colour. (Fig. 13.)

Award of Merit.

To *Catasetum* × *splendens leucanthum* (votes, 7 for, 5 against), from the Honble. Walter Rothschild, Tring Park, Tring. The flowers of this natural hybrid between *C. Bungeorhizii* and *C. macrocarpum* were very large, ivory white, with emerald green base to the lip.

To *Lælio-Cattleya* × *Pytho* (*L.-C. elegans* ♀ × *C. Loddigesii* ♂) votes, 6 for, 4 against), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond). A pretty hybrid, inclining towards *L.-C. elegans*, but with larger, wavy, purple-rose lip.

To *Lælio-Cattleya* × *Mardellii* (*Cattleya labiata* Ludemanniana ♀ × *L.-C.* × *elegans* ♂) (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. This pretty hybrid was originally raised by Messrs. Jas. Veitch & Sons and now repeated by Messrs. F. Sander & Co.

To *Odontoglossum crispum* 'Lord Sherborne' (votes, unani-



FIG. 13.—*MILTONIA VEXILLARIA* 'MEMORIA G. D. OWEN.' (*Journal of Horticulture.*)

mous), from Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton). A fine form of the *O. c. guttatum* class.

Botanical Certificate.

To *Chondrorhyncha albicans*, Rolfe n. sp., from the Honble. Walter Rothschild, Tring Park, Tring (gr. Mr. E. Hill).

To *Peristeria aspersa* from Messrs. F. Sander & Co.

To *Pleurothallis tribuloides*, from Messrs. F. Sander & Co.

To *Epidendrum fragrans*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Saccolabium miniatum*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Pogonia Lewisii*, from Messrs. W. L. Lewis & Co., Southgate, N.

Other Exhibits.

The Honble. Walter Rothschild (gr. Mr. E. Hill) showed various *Spathoglottis* and *Cœlogyne tomentosa*.

Sir Chas. Strickland, Bart., Hildenley, Malton, Yorks (gr. Mr. Smith), sent examples of his hybrid *Cypripedium* (*C. concolor* *Regnierii* × *C. bellatulum*).

A similar cross came from Mr. J. Keeling, of Sheffield.

C. L. N. Ingram, Esq. (gr. Mr. T. W. Bond), sent *Lælio-Cattleya* × *Regalis* (*L. purpurata* ♀ × *C. Mendelii* ♂), and *L.-C.* × *Electra* (*L. elegans* *Turnerii* × *C. Loddigessii*).

Holbrook Gaskell, Esq., Woolton Wood, Liverpool, sent *Cypripedium* × *Ledouxia*.

Alfred Warburton, Esq., Vine House, Haslingden, near Manchester, sent *Lælia tenebrosa* 'Victor Warburton,' resembling in some respects *L. t.* Walton Grange var., but smaller.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent *Masdevallia fragrans*.

T. W. Swinburne, Esq., Corndean Hall, Winchcombe, sent a fine selection of varieties of *Cypripedium bellatulum*, &c.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), showed two fine specimens of *Odontoglossum crispum*.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howes), showed varieties of *Lælia purpurata* and *Cattleya Mossiæ Wagnerii*, Cobb's var., in which a trace of pink appears.

ORCHID COMMITTEE, JUNE 23, 1896.

HARRY J. VEITCH, Esq., in the Chair, and fourteen members present.

Awards Recommended :—

Silver Flora Medal.

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a remarkable group of Orchids, in which were

a splendid specimen of *Renanthera Storiei*; a fine plant of *Rhyncostylis retusa*, with twelve spikes; large specimens of *Miltonia vexillaria*, *Masdevallias*, *Epidendrum Frederici-Gulielmi*, &c.

To Messrs. Jas. Veitch & Sons, King's Road, Chelsea, for a very fine group of Orchids, including *Lælio-Cattleya* × *Canhamiana alba*, L.-C. × *Eudora* (*C. Mendelii* × *L. purpurata*), *Cypripediums*, *Phalænopsis*, &c.

Silver Banksian Medal.

To His Grace the Duke of Sutherland, Trentham (gr. Mr. P. Blair), for a very fine plant of *Odontoglossum crispum*, 'Duke of Sutherland,' a noble form, with three spikes of very large white flowers. The plant had been cultivated at Trentham for over twenty years.

First Class Certificate.

To *Cypripedium superbiens* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A fine plant with nine flowers.

Award of Merit.

To *Cypripedium* × *Neptune* (*C.* × *Io grande* ♀ × *C. Rothschildianum* ♂) (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A fine hybrid with a resemblance to *C.* × *Massaianum*.

Botanical Certificate.

To *Cirrhopetalum nutans*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A compact-growing species with numerous umbels of small white flowers.

To *Gongora maculata*, from W. G. Soper, Esq., Harestone, Caterham Valley, Surrey.

Other Exhibits.

W. J. Thomson, Esq., Ghyllbank, St. Helen's, showed *Renanthera Storiei*.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), sent the large and richly coloured *Lælia tenebrosa gigantea* and *Odontoglossum* × *Coradinei expansum*.

Sir Frederick Wigan, Clare Lawn, East Sheen, Richmond (gr. Mr. W. H. Young), showed *Miltonia vexillaria Chelsoniana*, a variety very much resembling Baron Schröder's *M. v. radiata*.

Messrs. Hugh Low & Co., Clapton, showed good varieties of *Cattleya Mossiæ*, and a plant of the singular, greenish-flowered *Dendrobium chloropterum*, an Australian species.

H. Grinling, Esq., Harrow Weald House, Stanmore, showed *Cattleya Warscewiczii*, &c.

J. B. Walmsley, Esq., Liverpool, sent a spike of *Aerides radi-cosum album*.

Mr. N. Blandford, Bitterne, Southampton, showed *Cattleya Warscewiczii*.

Messrs. F. Sander & Co., St. Albans, sent a fine selection of Orchids in flower.

Welbore S. Ellis, Esq., Hazelbourne, Dorking, exhibited a collection of *Odontoglossum crispum*.

Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Geo. Cragg), contributed a collection of *Cattleyas*, *Stanhopea Wardii*, &c.

NARCISSUS COMMITTEE.

MARCH 24, 1896.

J. T. BENNETT POË, Esq., in the chair, and nine members present.

Mr. Cornhill exhibited a double seedling *Ajax*.

Mr. Hounslow exhibited a seedling *Ajax* very much like a big *Princeps*.

The Rev. G. H. Engleheart, Appleshaw, Andover, exhibited a fine collection of seedlings, including crosses between most of the different forms of *Narcissi*.

Prizes.

Class 3. Six varieties of *Narcissus*, distinct, five blooms of each, grown in the open air without protection. *Polyanthus* excluded. Amateurs. First Prize, 10s., to J. T. Bennett-Poë, Esq., Holmwood, Cheshunt.

Class 4 B. Seedling *Narcissus* not yet in commerce, raised and shown by an Amateur, and not having yet received a Prize at any R.H.S. Show. *Polyanthus* excluded. First Prize, 10s., to the Rev. G. H. Engleheart, for *Narcissus* seedling No. 478.

NARCISSUS COMMITTEE, APRIL 7, 1896.

J. T. BENNETT-POË, Esq., in the chair, and nine members present.

Awards Recommended:—

Silver Gilt Flora Medal.

To Rev. G. H. Engleheart, for a seedling Narcissus, 'White Queen.'

First Class Certificate.

To Narcissus poeticus 'Dante' (Poeticus ornatus \times poetarum) (votes, unanimous), from the Rev. G. H. Engleheart, a very beautiful early flowering variety, having a well-formed perianth and highly coloured corona. (Fig. 14.)

Award of Merit.

To 'Petrarch' (Ornatus \times Recurvus) seedling No. 359 (votes, unanimous), from the Rev. G. H. Engleheart.

Prizes.

Class 3.—Twenty-four varieties of Narcissus, distinct, five blooms of each. Polyanthus excluded. Amateurs. First prize, £1. 10s., to J. T. Bennett-Poë, Esq., Holmwood, Cheshunt.

Class 4 (D).—Twelve varieties of White Ajax, distinct, not less than three nor more than five blooms of each. Polyanthus excluded. Amateurs. First prize, £1, to Rev. G. H. Engleheart, Appleshaw, Andover.

Class 5.—Twelve varieties of yellow and bi-colour Ajax, distinct, not less than three nor more than five blooms of each. Polyanthus excluded. Amateurs. First prize, 15s., to J. T. Bennett-Poë, Esq., Holmwood, Cheshunt.

Class 6 (F). Seedling Narcissus, not yet in commerce, raised and shown by an Amateur, and not having yet received a Prize at any R.H.S. Show. First prize, 10s., to Rev. G. H. Engleheart.

Other Exhibits:—

Double Ajax raised by Mr. Cornhill, Seedlings raised by Mr. Cammell, Seedlings N. Dubius (? crossed with Triandrus) from Professor M. Foster, and a very varied and beautiful collection of Seedlings raised by Mr. Engleheart, many of which had not been shown before.

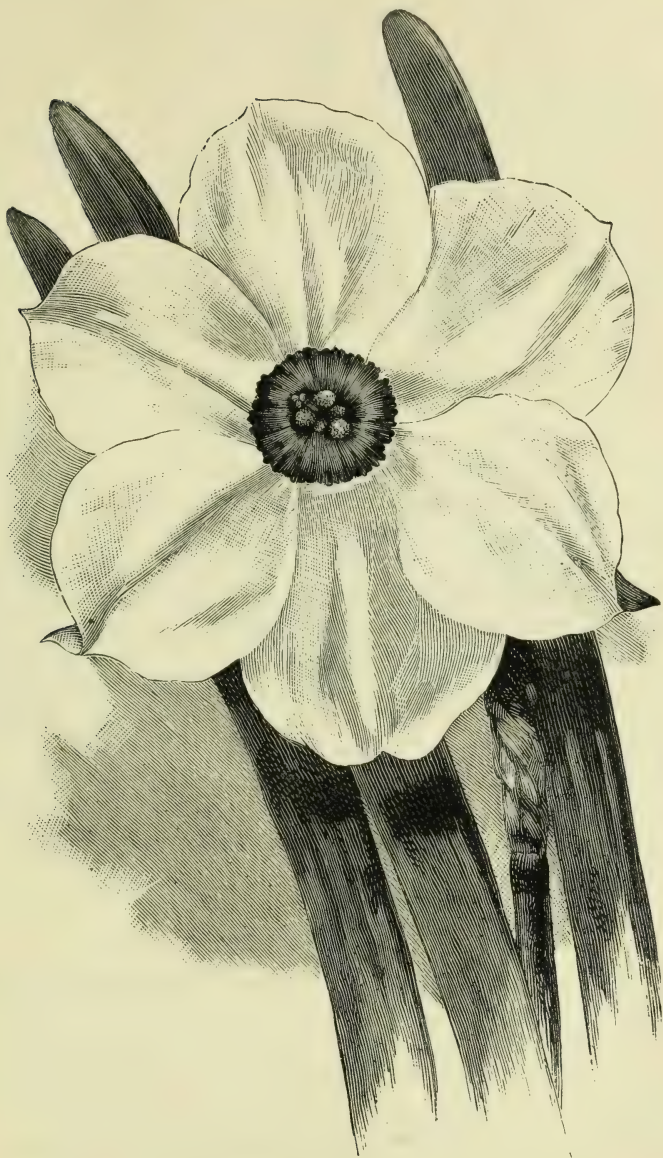


FIG. 14.—NARCISSUS POETICUS 'DANTE.' (*Journal of Horticulture.*)

NARCISSUS COMMITTEE, APRIL 21, 1896.

J. T. BENNETT-POË, Esq., in the chair, and twelve members present.

Awards Recommended :—

Silver Banksian Medal.

To Rev. G. H. Engleheart for stand which included, among many others, 'Silver Star,' 'Carmen,' and 'Spitfire.'

The Committee desired to see again flowers shown by Mr. Cammell.

Prizes.

Class 6.—Eight varieties of Yellow and Bi-colour Ajax, distinct, not less than three nor more than five blooms of each. Polyanthus excluded. Amateurs. First prize, 10s. to A. Kingsmill, Esq., Harrow Weald.

Class 7.—Eighteen varieties of Narcissus, Ajax excluded, distinct, not less than three nor more than five blooms of each. Polyanthus excluded. Amateurs. First prize, £1, to A. Kingsmill, Esq., Harrow Weald.

Class 8 (L).—The best stand of new seedling Narcissi, not yet in commerce, raised from seed by the exhibitor, not less than twelve varieties, distinct, not more than six blooms of each, and not more than one-third of the total number of varieties shown to be of the Ajax section. Polyanthus excluded. Open. Prize, £5, given by Miss Willmott, to Rev. G. H. Engleheart, Appleshaw, Andover.

Class 9 (M). Seedling Narcissus, not yet in commerce, raised and shown by an Amateur, and not having yet received a Prize at any R.H.S. Show. First Prize, 10s., to Rev. G. H. Engleheart.

NARCISSUS COMMITTEE, MAY 5, 1896.

Rev. G. H. Engleheart in the chair and four members present.

Awards Recommended :—

Award of Merit.

To Narcissus Philip Hurt from the Rev. G. H. Engleheart.

Prize.

Class 6 (Q). Seedling Narcissus, not yet in commerce, raised and shown by an Amateur, and not having yet received a Prize at any R.H.S. Show. First Prize, 10s., to Rev. G. H. Engleheart.

EXTRACTS FROM THE PROCEEDINGS
OF THE
ROYAL HORTICULTURAL SOCIETY.

GENERAL MEETING.

JULY 14, 1896.

Rev. W. WILKS, M.A., in the Chair.

Fellows elected (20).—Edwin Bostock, Mrs. Covell, Rev. Canon Cromwell, A. Douglas, Miss A. F. A. Harley, William A. Holmes, A. Lister, Col. Charles Lyne, Rev. Gerald Moor, Lady Stafford Northcote, William U. Nunns, Mrs. Golding Palmer, Captain W. C. Partridge, Sir Weetman D. Pearson, Bart., M.P., Mrs. Peers, William B. Reid, A. J. Rhodes, Richard Rigg, Col. A. R. Savile, James Sendall.

A Paper on "New Roses," by Rev. J. H. Pemberton, was read by the Assistant Secretary.

GENERAL MEETING.

JULY 28, 1896.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair.

Fellows elected (6).—Joseph A. Arkwright, Mrs. Edward Ind, J. N. Paxman, Earl of Pembroke, A. F. Theakston, Mrs. Wakefield.

A Lecture on "Cacti" was given by Mr. E. B. H. Chapman.

DEPUTATION TO CHESTER SHOW.

AUGUST 5, 1896.

THE Committee of the Chester Horticultural Show having invited the Council of the Royal Horticultural Society to visit their exhibition, the following gentlemen were appointed a deputation for the purpose :—

Sir Trevor Lawrence, Bart., President, R.H.S.
 Philip Crowley, Esq., F.L.S., F.Z.S., &c., Treasurer, R.H.S.
 Charles E. Shea, Esq., Member of Council.
 Thomas Statter, Esq., Member of Council.
 George Bunyard, Esq., Member of Council.
 F. W. Burbidge, Esq., M.A., F.R.H.S.
 T. Francis Rivers, Esq., F.R.H.S.
 George Paul, Esq., F.R.H.S.
 Mr. James McIndoe, F.R.H.S.
 Rev. W. Wilks, M.A., Secretary, R.H.S.

The deputation reached Chester on Tuesday afternoon, August 4, and was received at the railway station by the Sheriff of the city; J. Wynne-Foulkes, Esq., Hon. Sec. of the Chester Committee; George Dickson, Esq.; and other leading members of the ancient city. Carriages were in waiting to convey the deputation to the Grosvenor Hotel, with the exception of the President, who was to be the guest of the Duke of Westminster at Eaton.

At 6 o'clock the Chester Committee entertained the deputation at dinner, the Mayor of the city presiding, in the unavoidable absence of the Duke through illness.

At 7.30 a conference was held at the Town Hall, the Mayor again kindly presiding in the Duke's absence. The papers read at the conference by Sir Trevor Lawrence, Bart., the Very Rev. the Dean of Rochester, and F. W. Burbidge, Esq., M.A., Curator of the Botanic Gardens of Trinity College, Dublin, will be found on page 77 *et seq.*

On Wednesday morning the deputation assembled at the showground on the Roodeye at 9.45, and by 10 o'clock all was ready for them to begin their work. The awards made will be found below.

After the deputation had finished their work they were (together with the Judges of the Show) entertained at luncheon about 1.30 p.m., his Worship the Mayor again presiding, supported by the Sheriff and principal inhabitants of the city.

His Worship, after giving the usual loyal toasts and expressing the regret of all present at the Duke's illness and consequent absence, bade a hearty welcome to the deputation, to which Sir Trevor Lawrence, President of the Royal Horticultural Society, responded. "Success to the Show" was proposed by the Rev. W. Wilks, Secretary, R.H.S., and responded to by the Mayor. J. Wynne-Foulkes, Esq., Hon. Sec. of the Chester Show, gave "The Health of the Judges," which having been responded to by Mr. John Wright, of the *Journal of Horticulture*, the proceedings terminated, some of the deputation returning to London at once, others dispersing north and west.

Awards :—

Gold Medal.

To Dicksons, Chester, for a collection of Plants, Flowers, Fruits, and Vegetables.

Silver Cup (value £10. 10s.), most kindly presented by Thomas Statter, Esq., of Stand Hall, Whitefield, Manchester, and a member of the Council of the R.H.S., was awarded to his Grace the Duke of St. Albans, Bestwood Lodge, Notts (gr. Mr. Edwards), for a Group of Plants arranged for effect.

Silver-gilt Flora Medal.

To Messrs. James Veitch & Sons, Chelsea, for a group of Caladiums, Nepenthes, Rhododendrons, &c.

To Messrs. James Cypher, Cheltenham, for a group of Plants.

To his Grace the Duke of St. Albans, Bestwood Lodge, Arnold, Notts (gr. Mr. John Edmonds), for a group of Plants.

To Messrs. T. S. Ware, Tottenham, for a group of Begonias.

Silver-gilt Knightian Medal.

To his Grace the Duke of Westminster, Eaton (gr. Mr. Barnes), for a collection of Fruit.

To the Earl of Harrington, Elvaston Castle, Derby (gr. Mr. Goodacre), for a collection of Fruit.

Silver-gilt Banksian Medal.

To Messrs. Dobbie & Co., Rothesay, for a collection of Sweet Peas, Violas, and Phloxes.

Silver Flora Medal.

To Mr. R. Hartland, Cork, for double Begonias.

To Messrs. R. P. Ker & Son, Aigburth, Liverpool, for Crotons.

To Messrs. F. Sander & Co., St. Albans, for a group of Orchids.

To T. H. Sykes, Esq., Cringle House, Cheadle (gr. Mr. J. Roderick), for a group of Plants.

To Mrs. Gurney Pease, Woodside, Darlington (gr. Mr. McIntyre), for a group of Plants.

To Messrs. Fisher, Son & Sibray for a group of Plants containing many hardy shrubs.

To Messrs. Cannell & Son, Swanley, for Dahlias, Cannas, and Cockscombs.

To Messrs. Peed & Sons, Streatham, for Caladiums.

To Messrs. Birkenhead, Sale, Manchester, for Ferns.

To Mr. H. Brownhill, Sale, Manchester, for Begonias and Chrysanthemums, coronarium varieties.

To Mr. James Cypher, Cheltenham, for specimen stove and greenhouse Plants.

To Messrs. J. Cowan & Co., Garston, Liverpool, for a group of Tea Roses.

Silver Knightian Medal.

To Sir J. Pease, Bart., Hutton Hall (gr. Mr. McIndoe), for a collection of Fruit.

To the Earl of Carnarvon, Highelere (gr. Mr. Pope), for a collection of Vegetables.

Silver Banksian Medal.

To Mr. M. Campbell, Blantyre, for a group of Carnations.

To Messrs. Eckford, Wem, for Sweet Peas.

To Messrs. Hugh Low, Clapton, for a small group of Orchids.

To Mr. C. Parker, Quarry Cottages, Waverton, for a Cottager's Collection of Vegetables.

Highly Commended.

Four specimen Crotons, from T. S. Timmis, Esq., Allerton, Liverpool (gr. Mr. Cromwell).

A collection of Vegetables, from Lady Theodora Guest, Henstridge (gr. Mr. Wilkins).

A collection of Vegetables (Cottager's), from Mr. Alex. Maclean, Chester.

Cultural Commendation.

To Mr. John Thompson, gardener to Wm. Pritchard, Esq., Little Neston, Chester, for Muscat of Alexandria Grapes.

To Mr. F. Harris, gardener to Lady Henry Somerset, for Cherries Bigarreau Napoleon.

First Class Certificate.

To *Ericonema* 'Fascination' (votes, unanimous), from Messrs. Sander, St. Albans. A plant having a very great resemblance to a *Bertolonia*, with creamy green leaves with white venations.

To *Saraceina Sanderiana* (votes, unanimous), from Messrs. Sander & Co., St. Albans. The pitchers of this beautiful plant are densely netted with transparent crimson.

To *Watsonia iridifolia* 'Arderne' (votes, unanimous), from Messrs. Wallace & Co., Colchester. Like a giant and erect *Freesia*, having leaves and growth very similar to a *Gladiolus*, with a spike of pure white *Freesia*-shaped blooms.

Award of Merit.

To *Oncidium Jonesianum flavens* (votes, unanimous), from Messrs. Cypher, Cheltenham. The sepals of this variety were of a primrose colour, faintly spotted with pale green.

To *Begonia* 'Queen Victoria' (votes, unanimous), from Messrs. Sander, St. Albans. Of the foliage section, having leaves with an exceedingly dark centre, with a broad green and silver band and a narrow dark edge.

To *Lilium speciosum album novum* (votes, unanimous), from Messrs. Wallace, Colchester. A very large and strong form of *L. Krætzneri album*.

To *Caladium* 'Lady Moseley' (votes, unanimous), from Messrs. James Veitch & Sons, Chelsea. Large bright rose-coloured leaves clearly margined with green. A decided improvement on 'Mrs. P. Morgan.'

To *Begonia* 'Princess Charles of Denmark' (votes, unanimous), from Messrs. James Veitch & Sons, Chelsea. Of the foliage section, pale pinkish violet in the centre, with a border of silver and green.

To *Begonia* 'Beauty' (votes, unanimous), from Mr. T. S. Ware, Tottenham. Single-flowers of medium size, but of great substance, pure white edged with deep cerise.

To Begonia 'Miss Emily Childs' (votes, unanimous), from Mr. T. S. Ware, Tottenham. Very large double flowers of a flesh-white, like a large blush Camellia.

To Rondeletia brilliantissima (votes, unanimous), from Dicksons, Chester. Flowers of a soft terra-cotta or strawberry colour, with a bright orange eye.

To Tomato 'Royal Windsor' (votes, unanimous), from Dicksons, Chester. A bright, clear yellow fruit, with reddish flush on the cheek. Of the Blenheim Orange type.

GENERAL MEETING.

AUGUST 11, 1896.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair.

Fellows elected (8).—John Carder, H. Disney, M.D., A. Drury, J. Hill, E. P. King, H. Lake, Capt. R. Peel, A. W. Lyme.

Mr. C. T. Druery, F.L.S., gave a Lecture (illustrated by magic-lantern views) on "Fern Generation, Normal and Abnormal."

GENERAL MEETING.

AUGUST 25, 1896.

Dr. MAXWELL T. MASTERS, F.R.S., in the Chair.

Fellows elected (9).—Mrs. Abbot, F. J. Baker, Francis Frew, W. G. Holmes, David Houston, Mrs. Louis, Malcolm MacGregor, Frank A. S. Welstead, A. N. Young.

Society affiliated (1).—Weston Bamfylde and District Horticultural Society.

A Paper on "Forcing Lily of the Valley," by Mr. T. Jannoeh, was read by the Assistant Secretary.

GENERAL MEETING.

SEPTEMBER 8, 1896.

Mr. GEO. BUNYARD in the Chair.

Fellows elected (9). James M. Allan, Miss E. Beck, Julius Creese, C. Orchard, J. P. Page, Montague Price, Vincent Provost, Edmund de Q. Quincey, H. H. Raschen.

Associate (1).—Mr. W. Harrison.

A Lecture on the "Gladioli" was given by Mr. J. Burrell.

SCIENTIFIC COMMITTEE.

JULY 14.

Dr. M. T. MASTERS, F.R.S., in the Chair.

Picea Alcockiana, *Foliaceous Cones*.—Mr. Meehan, of Germantown, Philadelphia, sent specimens showing the bracts of the cones becoming leaf-like, with the following observations:—"It represents a great struggle between the effort to make a cone and a branch. I have numbers on several plants. In some cases the branch, and in others the cone, nearly wins. The specimens are certainly due to the conditions of environment. There are about a dozen plants from 2 to 3 ft. high. Transplanted in the spring of 1895, it was with difficulty we got them through the drought and torrid heat of that exceptional season, the growth being but an inch or two. Other species of the order planted with them died absolutely."

Caladium, *Variegated Leaf*.—Mr. Philip Crowley, of Waddon House, Croydon, sent a very curious example of dissociation of colour. The leaf was mainly of a pale pink colour, but one quarter, sharply marked off by two lines at right angles to each other, was white with green veins. The suggested interpretation was that the plant which bore it was a cross between two plants having the above peculiarities respectively, and that the parental characters had become suddenly dissociated.

Crinum capense, *var.*—Rev. W. Shirley, of Southwick Parsonage, Fareham, sent a flower which proved to be a pale variety of this species. He remarks that he has succeeded in crossing it with *C. Moorei* as the male parent, having raised four plants, but was unable to effect a cross the reverse way.

Parrot Tulips not Seeding.—In response to an inquiry from the Secretary, Mr. Barr writes:—"We have been making inquiries over Holland, and are informed that the Dutch growers do not remember to have ever seen seed to ripen on these Tulips." It was suggested that it would be worth while experimenting with them next year to see if seed could be procured by artificial pollination.

Fungus on Primula.—A curious fungus (*Physarum gyrosum*) upon leaves of a *Primula* was sent by Mr. W. Hall, the super-

intendent of parks, Sunderland. It was forwarded to Kew for further investigation.

Wild Chamomile fatal to Lambs.—It was reported from the Duke of Bedford's Woburn Estate that this very common plant, *Matricaria chamomilla*, had proved highly injurious to sheep and lambs, several having died in consequence of having eaten it. The plant has never been suspected of having dangerous qualities, though the flowers are naturally rather acrid and bitter, in consequence of the presence of the essential oil which they contain. If the report be true, it may be suggested that the intense heat of the early summer may have intensified these properties, as is well known to be the case with *Artemisia*s, &c., in sub-tropical countries.

SCIENTIFIC COMMITTEE, JULY 28.

Dr. M. T. MASTERS, F.R.S., in the Chair.

Primula with Myxogastres.—The following report was received from Kew with reference to the specimen exhibited at the last meeting:—"The organism is one of the *Myxogastres* (*Physarum gyrosum*, Rost). It is not a parasite, and will do no injury unless it occurs in immense quantity, when it might be washed away by spraying. The early or plasmodium condition develops in darkness, and finally creeps up anything, organic or inorganic, for the purpose of forming its spores in a position where they may be readily dispersed when mature by wind and rain."

Pelargoniums treated with Salts.—Notes were compared as to the conditions of the three sets of white *Pelargoniums* under experiment. Mr. Henslow said that in his case all the plants treated with the salts, though perfectly vigorous, had failed up to the present time to develop any flowers, the trusses perishing when about half-an-inch long, but that they were now beginning to form well. On the other hand, the two plants not treated with salts had flowered well the whole time. Mr. Wilks and Dr. Russell, both alike, had all the plants flowering; but up to the present time there had been no effect upon the blossoms.

Deodar with Cones.—Mr. Henslow recorded the somewhat unusual fact that one tree out of four, planted about forty years

ago in his garden at Drayton House, Ealing, had six cones upon it at the present time.

Tomatos, Diseased.—Mr. Hillier, of Bariton, near Petersfield, forwarded some Tomatos which had failed to colour properly at the base. They were forwarded to Kew for examination, whence the following report has been received:—"The fruit has ripened unevenly, due probably to a disturbance in some part of the plant, presumably the root, which, however, is not forthcoming for examination."

Grapes, Blighted.—Mr. Messenger, of Woolverstone, Gardens, Ipswich, sent a bunch showing some affection to the stalk and leaves. It was sent to Chiswick for investigation.

FRUIT AND VEGETABLE COMMITTEE.

JULY 14, 1896.

PHILIP CROWLEY, Esq., in the Chair, and nineteen members present.

Awards Recommended:—

Silver-gilt Banksian Medal.

To H. H. Gibbs, Esq., Aldenham House, Elstree (gr. Mr. E. Beckett), for a very fine collection of vegetables.

Silver Knightian Medal.

To Messrs. James Veitch & Sons, Chelsea, for a large collection of fruit.

Silver Banksian Medal.

To Mrs. Abbot, South Villa, Regent's Park, N.W. (gr. Mr. Kelf), for beautiful boxes of Peaches 'Dymond,' 'Royal George,' and 'Dr. Hogg.' These were exhibited to show what excellent fruit can be grown with care within the metropolitan district; and great credit is due to the grower.

To Messrs. Johnson & Son, Boston, Lincolnshire, for a collection of Peas.

First Class Certificate.

To Strawberry 'Veitch's Perfection' (votes, unanimous), from Messrs. James Veitch & Sons, Chelsea. See page lxvi.

Award of Merit.

To Melon 'Barkham's Scarlet' (votes, 14 for), from Mr. J. Barkham, Longford House, Ryde. A scarlet-flesh fruit, beautifully netted, and of good flavour.

To Pea 'Boston Unrivalled' (votes, unanimous), from Messrs. Johnson, Boston. See page 67.

To Melon 'Effingham Perfection' (votes, 11 for), from G. Hatfield, Esq., Morden Hall, Surrey (gr. Mr. Alderman). A hybrid from (Hero of Lockinge \times Wm. Tillery) \times Windsor Castle. The Committee suggested that this Melon was worth sending up to them again.

Other Exhibits.

J. G. Morris, Esq., Allerton Priory, sent Tomato 'Frogmore Selected.'

Mr. W. Carmichael, Edinburgh, sent four seedling Strawberries: (1) 'William Carmichael' ('Waterloo' \times 'British Queen'); (2) 'Prince of Wales' ('Waterloo' \times 'British Queen'); (3) 'Princess of Wales' ('Latest of All' \times 'Frogmore Late'), of very good flavour, greatly resembling 'Latest of All'; (4) 'Queen of Denmark' ('Frogmore Late' \times 'Waterloo'), a smaller berry than the preceding, but of very good flavour. Mr. Carmichael was invited to send plants to Chiswick, where it was considered that greater justice might be done to the varieties than is possible by growing them so far north as Edinburgh.

The Marquis of Abergavenny, Eridge Castle (gr. Mr. Wilson), sent a Melon 'Eridge Perfection,' a hybrid from 'Longleat Perfection' \times 'Frogmore Seedling.' A white flesh fruit, wonderfully juicy and refreshing, but slightly lacking in flavour.

R. Burrell, Esq., Westley Hall, Bury St. Edmunds (gr. Mr. A. Bishop), sent a Tomato 'A 1' \times 'Conference.' Also a very sweet green flesh Melon. Also fruiting sprays of a small early Plum laden with fruit. It was thought to be the true Myrobalan Plum, and the Committee asked to see some of the fruit when ripe.

Earl Percy, Syon House, Brentford (gr. Mr. Wythes), sent two hybrid Melons: (1) 'Syon Gem' ('Syon House' \times 'Hero of Isleworth'); (2) 'Syon Queen' ('Hero of Isleworth' \times 'Syon House').

W. H. Willis, Esq., Lennox Lodge, Shanklin (gr. Mr. May), sent a Melon 'Lennox Beauty.'

Mr. W. Palmer, Andover, sent a Cucumber 'Palmer's Graceful.'

Mr. Owen Thomas, gardener to Her Majesty at Windsor, sent a Melon 'The Lady.'

Mr. F. G. Foster, Brockhampton, Havant, sent a Tomato 'Brockhampton King.' It was requested that seed might be sent to Chiswick.

FRUIT AND VEGETABLE COMMITTEE, JULY 28, 1896.

PHILIP CROWLEY, Esq., in the Chair, and fourteen members present.

Awards Recommended :—

Silver-gilt Knightian Medal.

To Messrs. James Veitch & Sons, for a magnificent collection of 125 dishes of fruit.

Silver Knightian Medal.

To Mrs. Abbot, Regent's Park, for very fine specimens of Peaches and Grapes grown within two miles of Charing Cross. It was considered that great praise was due to the grower.

First Class Certificate.

To Gooseberry 'Langley Beauty' (votes, unanimous), from Messrs. James Veitch & Sons, Chelsea. A hybrid between 'Yellow Champagne' and 'Railway.' The berries were very large, of a buff yellow colour, semi-transparent, somewhat hairy, and of delicious flavour. It combined the size of 'Railway,' a large greenish fruit, with the fine flavour and upright growth of the little 'Yellow Champagne.'

Award of Merit.

To Red Currant 'The Comet' (votes, unanimous), from Mr. H. Becker, Jersey. The bunches were six, some even eight, inches long; the berries very large, dark red, transparent, and as many as twenty-eight on a bunch. It was suggested that a bush should be sent to Chiswick.

To Gooseberry 'Langley Gage' (votes, unanimous), from Messrs. James Veitch & Sons, Chelsea. A hybrid between 'Pitmaston Greengage' and 'Telegraph.' The berries were in size between medium and small, silvery white, transparent, and of very fine flavour; an enormous bearer.

Other Exhibits.

Peaches and Nectarines were brought from the Society's Gardens.

J. R. Walker, Esq., Gilgarran, Cumberland (gr. Mr. Kydd), sent a Melon, 'Blenheim Orange' \times 'Spring Bank Scarlet.'

R. Burrell, Esq., Westley Hall (gr. Mr. Bishop), sent Melons, 'Westley Defiance' and 'Dr. S. Burrell'; the latter, a cross between 'Westley Hall' and 'Emerald Gem,' was a very fine fruit, beautifully netted, very sweet and juicy, and of fair flavour. Also a Tomato, which was of that bluish-scarlet colour which is not considered desirable.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. John Crook), sent some Gooseberries, one of which, of unknown name, was considered a very good fruit.

Mr. W. Handysides, Newcastle, sent a Tomato which had resulted from an attempt to cross a Tomato with the pollen of an Aubergine; no trace, however, of the Aubergine pollen influence appeared in the fruit.

Sir Matthew Wilson, Bart., Eshton Hall, Leeds (gr. Mr. Temple), sent a Melon, 'Eshton Hall.'

Earl Percy, Syon House (gr. Mr. Wythes), sent a Melon 'Syon Gem.'

Sir Joseph Pease, Bart., M.P., Hutton Hall, Guisborough (gr. Mr. McIndoe), sent some trees in pots of a new Japanese Plum called 'Burbank,' to show its marvellous bearing capacity, the young plants carrying fruit on every twig of last year's wood, and even down to the very soil in the pots.

Messrs. Cutbush & Sons, Highgate, sent two Tomatos, one scarlet, 'The Cropper,' somewhat resembling 'Challenger'; the other, 'King of the Yellows,' yellow, with a scarlet flush on the skin; of magnificent flavour. It was suggested to send seed to Chiswick.

Messrs. Hurst & Son, Houndsditch, sent Brydon's new Pea 'Pierremont Seedling.' It was of darker colour than, but

otherwise very like 'Daisy.' It was requested to send seed to Chiswick.

Messrs. Rivers & Son, Sawbridgeworth, brought a very refreshing and pleasant-flavoured white Grape, 'Gradiska,' not sufficiently known in this country. It was raised by M. Robert in 1851 at Angers, and it ripens, under the same treatment, three weeks or a month earlier than Black Hamburg.

Mr. Saltmarsh brought fruiting sprays of Myrobalan Plum in order to prove the identity of that shown at the last meeting.

FRUIT AND VEGETABLE COMMITTEE AT CHISWICK,

JULY 31, 1896.

PHILIP CROWLEY, Esq., in the Chair, and eleven members present.

The Committee inspected 101 varieties of Tomatos under trial, of which a report will be found on page 216.

Awards Recommended:—

Award of Merit.

To Potato 'Famous' (votes, unanimous).

To Tomato 'Nield's Seedling' (votes, unanimous).

To Tomato 'Young's Eclipse' (votes, unanimous).

To Tomato 'Chiswick Dessert' (votes, unanimous).

See Tomato and Potato Reports, pages 216 and 227.

FRUIT AND VEGETABLE COMMITTEE, AUGUST 11, 1896.

PHILIP CROWLEY, Esq., in the Chair, and thirteen members present.

Awards Recommended:—

Silver Banksian Medal.

To Messrs. G. Bunyard & Co., Maidstone, for a collection of 40 dishes of hardy fruit.

To Messrs. J. Veitch & Sons, Chelsea, for a collection of 26 dishes of hardy fruit.

Award of Merit.

To Melon 'Harris's Favourite' (votes, 7 for, 2 against), from Philip Crowley, Esq., Waddon House, Croydon (gr. Mr. Harris).

To Apple 'Cardinal,' syn. 'Peter the Great' (votes, 7 for, 1 against), from Messrs. G. Bunyard & Co., Maidstone. A fruit of peculiar shape, having, for its size, a very broad flat base, rising immediately to a very pointed cone, with the eye only slightly indented on the apex. Of medium size and good flavour when eaten fresh from the tree. The skin is streaked and splashed with rosy pink on a primrose ground. Stalk set in a wide, shallow depression. A small grower and prolific bearer.

To Pear 'Aspasie Aucourt' (votes, unanimous), from Messrs. Bunyard & Co. Fruit bluntly pyriform, with eye and stalk both deeply inset. Of medium size, yellowish green when ripe, melting, and of sweet, refreshing flavour. A good early pear, succeeding best on the Pear-stock, and bearing freely.

Cultural Commendation.

To Mr. J. Pownall, 5 Moss Street, Prescott, Lancashire, for 13 very large firm, blood red Onions named 'Failsworth Red.'

Other Exhibits.

W. Davies, Esq., Amberley Court, Stroud (gr. Mr. E. Butcher), sent Peach 'Princess of Wales,' and 'Madresfield Court' Grape.

Mr. W. Palmer, Andover, sent Cucumber 'Palmer's Graceful.'

Mr. W. Batchelor, Harefield Park, Uxbridge, sent a group of Japanese Wineberries (*Rubus phœnicolasius*), to which a First Class Certificate was granted in 1894; also a fine dish of Runner Beans named 'Best of All.'

Mr. James Nash, Belvedere Nursery, Wimbledon, sent Nectarine 'Victoria.'

Messrs. Hurst & Son, Houndsditch, sent a fine Pea named 'Captain Cuttle.' It was requested to be tried at Chiswick.

Mr. Wythes, Syon House, sent Melon 'Syon Gem.'

Mr. S. T. Gissham, Scorrier, Cornwall, sent a seedling Melon.

Mr. A. Alderman, Dorking, sent Melon 'Effingham Perfection.'

The Baroness Burdett-Coutts, Highgate (gr. Mr. Willard), sent a seedling Melon.

F. C. Carr Gomm, Esq., Slough (gr. Mr. Reid), sent Melon 'Wellbank Seedling.'

Messrs. G. Bunyard & Co., Maidstone, sent Pear 'Précoce de Trevouf.'

Mr. H. Kempshall, Lamport Hall, Northampton, sent a dish of large Potatos. The Committee considered it to be a form of 'Magnum Bonum.'

FRUIT AND VEGETABLE COMMITTEE, AUGUST 25, 1896.

PHILIP CROWLEY, Esq., in the Chair, and fourteen members present.

Awards Recommended:—

Silver-gilt Knightian Medal.

To H.M. the Queen (gr. Mr. Owen Thomas), for 50 dishes of very fine fruit.

To Messrs. J. Veitch & Sons, Chelsea, for 100 dishes of fruit.

Silver Knightian Medal.

To Earl Percy, Syon House (gr. Mr. Wythes), for 50 dishes of hardy fruits.

To P. M. Grahame, Esq., Hurst Side, West Molesey (gr. Mr. G. Elliott), for 6 bunches of 'Madresfield Court' Grapes and 6 bunches of 'Gros Maroc.'

Bronze Knightian Medal.

To Lord Gerard, Eastwell Park, Ashford (gr. Mr. Walters), for a collection of Peaches and Nectarines.

To C. J. Massey, Esq., Galloway House, Garlieston, N.B. (gr. Mr. Day), for a collection of hardy fruit.

To W. R. Cookson, Esq., Bracknell (gr. Mr. T. Dennis), for three very large and well-coloured bunches of 'Muscat Ham-burgh' Grapes.

To Messrs. S. Spooner & Sons, Hounslow, for 40 dishes of hardy fruits.

Award of Merit.

To Pea 'The Gladstone' (votes, unanimous), from Mr. W. G. Holmes, Seed Merchant, Tain, N.B. See p. 67.

Cultural Commendation.

To Mr. T. H. Crasp, Osberton, Worksop, for very well-coloured 'Ferdinand de Lesseps' Grapes.

Other Exhibits.

From the R.H.S. Gardens came Peaches 'Gladstone' and 'Desse Tardive'; also Grape 'San Antonio.' The Committee requested the Grape to be shown later.

Messrs. J. Veitch & Sons sent Plum 'Webster's Gage' and Apple 'Antonifka.'

Sir J. W. Pease, Hutton Hall, Guisborough (gr. Mr. McIndoe), sent Japanese Plum 'Burbank.'

Mr. O. Thomas, Royal Gardens, Windsor, sent Melon 'The Duchess'; also Plum 'Windsor Early.' The Committee requested grafts of the latter to be sent to Chiswick.

Mr. J. Johnson, Duffield, Stoke, sent Apple 'Johnson's Seedling.' The Committee requested it to be sent again when riper.

Mr. H. Becker, Beresford Street, Jersey, sent a dish of Pears 'Dr. Jules Guyot'; also Apple 'Jersey Beauty.' The Committee considered that the former was not true to name, and that the latter was identical with 'Yorkshire Beauty.'

Mr. T. H. Crasp, Osberton, Worksop, sent some remarkably fine Tomatos, with fruiting stems to show the plant's prolific habit. It was suggested by the Committee that seed should be sent to Chiswick.

Mr. Wythes, Syon House, sent Melon 'Syon Gem.'

C. T. Cayley, Esq., Leigham Court, Streatham (gr. Mr. Poulson), sent Melon 'Improvement.'

Mr. S. Cole, Swallowfield Park, Reading, sent Melon 'Swallowfield Park Favourite.'

Messrs. Harrison & Son, Leicester, sent a collection of 24 varieties of dwarf Beans.

Mr. J. Clark, Abbeywood, Kent, sent Tomatos 'Abbeywood Scarlet' and 'Abbeywood Crimson.'

Messrs. R. Veitch & Sons, Exeter, sent Carrot 'New Intermediate.'

Mr. A. Findlay, Maresfield Park, Uckfield, sent a dish of Peaches named 'Maresfield Park Seedling,' the skin and flesh being of a dark blood red.

Messrs. T. Rivers & Son, Sawbridgeworth, sent Japanese Plum 'Burbank.'

Messrs. Watkins & Simpson, Strand, sent Raspberry 'Steel's Favourite.'

FRUIT AND VEGETABLE COMMITTEE, SEPTEMBER 8, 1896.

PHILIP CROWLEY, Esq., in the Chair, and seventeen members present.

Awards Recommended:—

Silver Knightian Medal.

To Lord Foley, Esher, Surrey (gr. Mr. Miller), for 48 dishes of fruit.

To Messrs. J. Laing & Sons, Forest Hill, for 100 dishes of Apples and Pears.

Other Exhibits.

Messrs. Young & Dobinson sent Tomato 'Young's Eclipse.'

Miss McDonald, North Gate, Chichester, sent Tomato 'McDonald's Golden Dessert.'

The Lady O'Hagan, The Priory, Highgate (gr. Mr. Stuart), sent a remarkable bunch of 'Bergamotte d'Esperen' Pear, having 35 fruits growing in a single cluster.

Messrs. Carter & Co., London, sent a large collection of Cabbages and Kales.

Lord Hastings, Melton Constable, Norfolk (gr. Mr. Shingler), sent a new black Grape named 'Lady Hastings.' The Committee requested it to be sent again, with particulars as to its origin, &c.

Mr. A. W. Partridge, Saham Toney, Norfolk, sent Apple 'Saham Toney.'

The Earl of Lathom, Lathom House, Ormskirk (gr. Mr. B. Ashton), sent Melon 'Earl of Lathom,' which was over-ripe.

F. Foljambe, Esq., Osberton Hall, Worksop (gr. Mr. T. H. Crasp), sent Melon 'Osberton.'

Earl Percy, Syon House (gr. Mr. Wythes), sent Melon 'Thames Bank.'

Messrs. E. J. Sarjeant & Co., Stratton Vineries, Worthing, sent some handsome Aubergines.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. Crook), sent a seedling Apple of beautiful colour. The Committee requested it to be sent again later.

Messrs. H. Cannell & Sons, Swanley, sent a beautifully curled Parsley 'Eynsford Beauty.'

FRUIT AND VEGETABLE COMMITTEE AT CHISWICK,
SEPTEMBER 17, 1896.

PHILIP CROWLEY, Esq., in the Chair, and ten members present.

Awards Recommended :—

Award of Merit.

To Potato 'Saxon.'

To Potato 'Early White Kidney.' [A Potato of this name was certificated in 1873.—*Eds.*]

To Beet 'Nutting's Selected Dwarf.'

To Beet 'Egyptian Dark Red.'

To Beet 'Cheltenham Green-top.'

To Beet 'Turnip-rooted Red Globe.'

To Beet 'Dell's Celebrated Dwarf.'

To Beet 'Perfection Dwarf Red.'

See Report on Beet and Potatos, pp. 223 and 227.

FLORAL COMMITTEE.

JULY 14, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-two members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Messrs. W. Cutbush & Son, Highgate, for a collection of Ivies.

Silver Flora Medal.

To A. F. Hayward, Esq., Winchester, for a beautiful collection of paintings of Roses and Pansies.

To Mr. M. Prichard, Christchurch, for a group of hardy flowers.

To Mr. T. S. Ware, Tottenham, for Carnations.

To Messrs. R. Hartland & Son, Cork, for double tuberous Begonias.

Silver Banksian Medal.

To Messrs. J. Cheal & Sons, Crawley, for a group of shrubs and hardy plants.

To Messrs. R. Wallace & Co., Colchester, for a group of Calochorti and Lilies.

To Mr. W. Rumsey, Waltham Cross, for Roses.

Bronze Banksian Medal.

To Messrs. J. Veitch & Sons, Chelsea, for Sweet Peas.

To Mr. F. C. Foster, Havant, for Sweet Peas.

First Class Certificate.

To *Adiantum Bessonianum* (votes, unanimous), from James O'Brien, Esq., Harrow-on-the-Hill. A vigorous growing variety of good habit, somewhat similar to *A. Pacotti*. Fronds deep green and slightly fringed.

To *Lilium concolor* (votes, 7 for, 6 against), from Messrs. R. Wallace & Co., Colchester. A dwarf variety of slender growth. Leaves small, lanceolate, light green. Small orange scarlet flowers spotted with crimson.

To *Clethra canescens* (votes, 16 for), from Messrs. J. Veitch & Sons. A rare and very handsome free-flowering, hardy shrub ; with deep green lanceolate leaves. Flowers small, borne on long racemes ; pure white and sweetly scented.

To *Didymocarpus malayanus* (votes, unanimous), from Messrs. J. Veitch & Sons. A very pretty new species. A stove or greenhouse plant of dwarf habit with ovate leaves, the central portion of which is glaucous, running to a deep green towards the edges and covered all over with silvery hairs. The pale yellow tubular flowers are borne in clusters of two or three on peduncles 3 or 4 inches high.

Award of Merit.

To Carnation 'Alice Mills' (votes, unanimous), from E. C. Sharpin, Esq., Bromham Road, Bedford. Flowers yellow, striped and edged with deep rosy red. A grand variety.

To Carnation 'Mrs. Mackrae' (votes, unanimous), from Martin R. Smith, Esq., The Warren, Hayes (gr. Mr. Blick). Flowers bright scarlet, flushed with rose.

To Carnation 'Blushing Bride' (votes, unanimous), from Martin R. Smith, Esq. (gr. Mr. Blick). Flowers of medium size, of a delicate pale pink.

To Carnation 'Dick Donovan' (votes, unanimous), from Martin R. Smith, Esq. (gr. Mr. Blick). Flowers very large, petals round, smooth, pure white. An excellent variety.

To Carnation 'Golden Eagle' (votes, unanimous), from Martin R. Smith, Esq. (gr. Mr. Blick). Flowers large, yellow, striped and edged with rosy pink.

To Carnation 'Boreas' (votes, unanimous), from Martin R. Smith, Esq. (gr. Mr. Blick). A fine border variety, with large deep crimson flowers of good substance.

To Carnation 'Voltaire' (votes, unanimous), from Martin R. Smith, Esq. (gr. Mr. Blick), and Mr. J. Douglas, Great Bookham. Flowers large, pale yellow, flaked and edged with rosy red.

To Gaillardia 'Mrs. Sage' (votes, unanimous), from the Earl of Dysart, Ham House, Richmond (gr. Mr. Sage). A handsome variety with large, well-formed flowers; the disc rich golden yellow surrounded by a bronzy crimson zone.

To Tea Rose 'Francis Dubriul' (votes, 14 for), from Messrs. W. Paul & Son, Waltham Cross. Flowers of medium size; rich crimson shaded with rose towards the centre.

To Tea Rose 'Empress Alexandra' (votes, unanimous), from Messrs. W. Paul & Son. A handsome salmon rose variety of good form and substance.

To the strain of *Streptocarpus pulchellus* (votes, unanimous), from Messrs. J. Veitch & Sons. A very fine strain with large richly coloured flowers.

To Carnation 'May Queen' (votes, unanimous), from Mr. C. Turner, Slough. A very pretty variety, with large sulphur-yellow flowers edged with rosy purple.

To Carnation 'Primrose League' (votes, unanimous), from Mr. C. Turner. A magnificent variety. Flowers large, clear primrose, splashed with rosy purple.

To Picotee 'Clio' (votes, unanimous), from Mr. C. Turner. Flowers very large, white, margined with deep rose.

To Sweet Pea 'Lady Grisel Hamilton' (votes, 15 for), from Mr. H. Eckford, Wem, Salop. A variety with pale lavender flowers.

To Sweet Pea 'Queen Victoria' (votes, 9 for, 7 against), from Mr. H. Eckford. Flowers creamy-white, tinged with pink.

To Sweet Pea 'Prince Edward' (votes, unanimous), from Mr. H. Eckford. Standards orange-red, wings rose, shaded with purple.

To Gloxinia 'Mrs. F. T. Edridge' (votes, 10 for, 9 against), from Messrs. J. Laing & Sons, Forest Hill. Flowers large, erect; deep velvety purple, edged with violet.

To Carnation 'Jim Smyth' (votes, unanimous), from Mr. H. G. Smyth, 21 Goldsmith Street, Drury Lane, W.C. A magnificent border variety with large bright scarlet flowers.

To Canna 'Ami Jules Chrétien' (votes, 8 for, 7 against), from Messrs. H. Cannell & Sons, Swanley. Large orange scarlet flowers, flushed with salmon pink.

To Canna 'Aurore' (votes, 15 for), from Messrs. H. Cannell & Sons. Plant of dwarf habit, with very large bright orange scarlet flowers.

Other Exhibits.

Edwin Bostock, Esq., Tixall Lodge, Tixall, sent a specimen of Frangipanni—*Plumeria rubra*.

H.R.H. the Duchess of Albany, Claremont, Esher (gr. Mr. Burrell), sent sprays of a somewhat rare ornamental hardy tree named *Pterocarya caucasica*.

J. G. Mortlock, Esq., Meldreth, Royston, Cambs. (gr. Mr. Maurer), sent some Rose trees which had been budded in the last winter, with a view to saving a season, and were now coming into blossom. A very interesting experiment.

A. Pears, Esq., Spring Grove, Isleworth (gr. Mr. Farr), sent an unnamed *Caladium*.

Mr. C. Dymott, Southampton, sent a new late show *Pelargonium*, 'Harry Dymott.'

Messrs. S. Rogers & Sons, Whittlesea, Peterborough, sent *Picotee* 'Border Queen.'

From Messrs. Frewer Bros., Stowmarket, came three varieties of *Begonias*.

Messrs. Young & Dobinson, Stevenage, staged a group of flowers.

Mr. W. Smart, Welton, Lincoln, sent two single Chrysanthemums.

From Messrs. J. Veitch & Sons, Chelsea, came a beautiful collection of Water Lilies.

New Carnations were also exhibited by—

1. C. W. Troughton, Esq., 6 South Row, Blackheath.
2. F. G. Leman, Esq., South Carey House, Castle Carey, Somerset.
3. Allan Chandler, Esq., Bunch Lane, Haslemere.
4. E. C. Sharpin, Esq., Bromham Road, Bedford.
5. Mr. E. Trollope, Whitechurch, Oxon.
6. Mr. G. Radford, Colton, Rugeley.
7. Mr. J. Douglas, Edenside, Great Bookham, Surrey.
8. Mr. H. W. Weguelin, Teignmouth, Devon.
9. Mr. C. Berwick, Sidmouth.
10. Mr. C. Noble, Bagshot.

ROSE SHOW.

HYBRID PERPETUALS.

Class 1. Twenty-four single trusses, distinct. Amateurs. First, Silver Cup, or £4, to T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter); second, £2, to C. J. Grahame, Esq., Wrydelands, Leatherhead.

Class 2. Twenty-four single trusses, distinct. Open. First, £3, equal, Mr. G. Mount, Canterbury, and Messrs. Paul & Son, Cheshunt.

Class 3. Twelve single trusses, distinct. Amateurs. First, £1. 10s., to Rev. W. H. Jackson, Bedford (gr. Mr. Bonnett); second, £1, to R. E. West, Esq., Wray Park, Reigate.

Class 4. Twelve single trusses, distinct. Open. First, £1. 10s., to Mr. G. Mount; second, £1, to Messrs. Paul & Son.

Class 5. Six single trusses, distinct. Amateurs. First, £1, to John Bateman, Esq., Rosevale, Archway Road, N.W.; second, 15s., to Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich.

Class 6. Six single trusses of any one variety. Amateurs. First, £1, to Rivers H. Langton, Esq., Raymead, Hendon; second, 15s., to Rev. W. H. Jackson (gr. Mr. Bonnett).

Class 7. Twelve distinct, three trusses of each. Open.

First, £2. 10s., to Mr. G. Mount ; second, £1. 10s., to Messrs. Paul & Son.

Class 8. Twelve single trusses of any one variety. Open. First, £1. 10s., to Mr. G. Mount ; second, £1, to Messrs. Paul & Son.

TEAS AND NOISETTES.

Class 9. Twenty-four single trusses, not less than twelve varieties or more than three trusses of any one variety. Amateurs. First, Silver Cup, or £4, to O. B. Orpen, Esq., West Bergholt, Colchester ; second, £2, to Rev. A. Foster-Melliar.

Class 10. Twelve single trusses, not less than nine varieties, or more than two trusses of any one variety. Amateurs. First, £1. 10s., to A. Chandler, Esq., Bunch Lane, Haslemere.

Class 11. Six single trusses, not less than four varieties. Amateurs. First, £1, to R. E. West, Esq.; second, 15s., to Rivers H. Langton, Esq.

Class 12. Six single trusses of any one variety. Amateurs. First, £1, to O. G. Orpen Esq.; second, 15s., to Rev. W. H. Jackson (gr. Mr. Bonnett).

Class 13. Twenty-four distinct single trusses. Open. First, £3, to Messrs. D. Prior & Son ; second, £2, to Messrs. Paul & Son.

Class 14. Twelve distinct, three trusses of each. Open. First, £2. 10s., to Messrs. D. Prior & Son ; second, £1. 10s., to Messrs. Paul & Son.

Class 15. Twelve single trusses of any one variety. Open. First, £1. 10s., to Messrs. Paul & Son ; second, £1, to Messrs. D. Prior & Son.

FLORAL COMMITTEE, JULY 28, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-three members present.

Awards Recommended :—

Gold Medal.

To Mr. H. J. Jones, Lewisham, for a very large group of flowering and foliage plants—Caladiums, Crotons, Palms, Ferns, Bamboos, and single and double Begonias.

Silver Flora Medal.

To Mr. T. S. Ware, Tottenham, for a group of hardy flowers.

To Messrs. H. Cannell & Sons, Swanley, for a collection of Cactaceous plants.

Silver Banksian Medal.

To Mr. J. Walker, Thame, for a group of Dahlias and Sweet Peas.

To Messrs. W. Cutbush & Son, Highgate, for a collection of hardy flowers.

To Messrs. Barr & Son, Covent Garden, for a group of hardy plants.

To Mr. R. Jensen, Mansfield Hill, Chingford, for a group of Zonal Pelargonium 'King of Denmark.'

Bronze Banksian Medal.

To Messrs. Webb & Brand, Saffron Walden, for Hollyhocks.

Award of Merit.

To *Campanula pyramidalis compacta alba* (votes, 10 for, 3 against), from Earl Percy, Syon House, Brentford (gr. Mr. Wythes). A very compact growing variety, bearing stout much-branched spikes with pure white flowers.

To Hollyhock 'Ovid' (votes, 11 for, 3 against), from Messrs. Webb & Brand. A handsome variety, with large deep rose-coloured flowers.

To *Delphinium Zalil* (votes, 17 for), from Messrs. Barr & Son. Soft sulphur yellow flowers on long spikes.

Other Exhibits.

Mr. H. J. Hughes, Whitchurch, Salop, sent a group of Carnations.

From Messrs. J. Veitch & Sons, Chelsea, came a small group of hardy flowering shrubs.

Messrs. J. Laing & Sons, Forest Hill, sent *Begonia* 'Maréchal Niel.'

Mr. J. Hazelby, Hampton, brought a group of Ivy-leaved Pelargoniums.

Messrs. Young & Dobinson, Stevenage, sent Tuberous Begonias.

Messrs. J. Carter & Co., High Holborn, showed a *Petunia* named 'Queen of Roses.'

Messrs. T. Cripps & Son, Tunbridge Wells, sent specimens of *Salisburia adiantifolia variegata* and *Hypericum aureum*.

Mr. C. Turner, Slough, sent a *Cactus Dahlia* named 'Cedric,' which the Committee asked to see again.

Prize.

Class 3.—Collection of Cactaceous plants. Prize Silver Flora Medal, to Mr. Pritchard, 78 Godwin Road, Forest Gate, E.

FLORAL COMMITTEE, AUGUST, 11, 1896.

W. MARSHALL, Esq., in the Chair, and seventeen members present.

Awards Recommended:—

Silver-gilt Flora Medal.

To Messrs. Kelway & Son, Langport, for an immense variety of *Gladioli*.

To Messrs. J. Veitch & Sons, Chelsea, for a large group of *Caladiums*, *Bamboos*, and *Gladioli*.

Silver-gilt Banksian Medal.

To Mr. T. S. Ware, Tottenham, for a group of hardy flowers.

Silver Flora Medal.

To F. Reckitt, Esq., Caenwood Towers, Highgate (gr. Mr. Burt), for a group of *Crotons*, *Dracenas*, *Caladiums*, *Lilies*, and *Campanulas*.

To Messrs. H. Cannell & Sons, Swanley, for 24 varieties of *Cocksecombs*.

Silver Banksian Medal.

To Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain), for a collection of *Gladioli* and *Crinums*.

To Sir Weetman Pearson, Bart., Paddockhurst, Crawley (gr. Mr. Capp), for a group of *Carnations*, *Hollyhocks*, *Asters*, *Coreopsis*, and *Solidagos*.

To P. Purnell, Esq., Woodlands, Streatham Hill, S.W., for a group of *Begonias*, *Petunias*, *Balsams*, and *Ferns*.

To Messrs. J. Peed & Sons, West Norwood, for a group of Caladiums, Palms, Ferns, Tuberous Begonias, and Orchids.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers.

To Messrs. Paul & Son, Cheshunt, for a group of Roses, Gailardias, Phloxes, and Coreopsis.

To Messrs. W. Cutbush & Son, Highgate, for hardy flowers.

Bronze Banksian Medal.

To Messrs. J. Cheal & Sons, Crawley, for a collection of Dahlias and ornamental Crab-apples.

First Class Certificate.

To *Nymphæa Robinsoniana* (votes, unanimous), from Messrs. de Rothschild, Gunnersbury House, Acton (gr. Mr. Hudson). Flowers large, deep crimson, shaded with rose towards the centre. An exceptionally fine variety.

To *Nymphæa marliacea carnea* (votes, unanimous), from Messrs. de Rothschild. Flowers white suffused with pink.

To *Phyllostachys Kumasasa* (votes, 4 for, 1 against), from Messrs. J. Veitch & Sons. Plant of bushy habit, with small deep green leaves and reddish coloured stems.

To *Bambusa palmata* (votes, unanimous), from Messrs. J. Veitch & Sons. A very graceful hardy plant with bold bright green foliage.

Award of Merit.

To *Gladiolus Nanceianus* 'Jean Dibowski' (votes, 14 for), from Sir Trevor Lawrence, Bart., and Messrs. J. Veitch & Sons. A very distinct variety with large crimson flowers spotted with creamy white.

To *Gladiolus Lemoinei* 'Emile Augier' (votes, unanimous), from Sir Trevor Lawrence. A very handsome variety. Flowers canary-yellow suffused with a deeper shade and blotched with crimson.

To *Streptocarpus* 'Mrs. Heal' (Veitch's hybrid ♀ × *S. Wendlandi* ♂) (votes, 11 for), from Messrs. J. Veitch & Sons. A magnificent form with large finely formed flowers; colour deep violet blue, throat claret, spotted and striped with yellowish white.

To *Gladiolus* 'Senateur Volland' (votes, unanimous), from

Messrs. J. Veitch & Sons. Flowers bluish lilac striped with creamy white.

To Gladiolus 'Deuil de Carnot' (votes, unanimous), from Messrs. J. Veitch & Sons. Flowers borne on slender spikes; colour deep maroon striped with scarlet.

To Abutilon 'Silver Queen' (votes, 10 for, 2 against), from Mr. Sharp, Avenue End, Fareham. A dwarf-growing variety with much cut foliage; colour creamy white blotched with green.

To Pentstemon 'President Carnot' (votes, 9 for, 5 against), from Messrs. Barr & Son. Very large deep crimson flowers with a white throat.

To Gladiolus 'Baxter' (votes, 7 for), from Messrs. Kelway & Son, Langport. Large deep maroon flowers shaded with purple.

To Gladiolus 'Carlyle' (votes, 9 for), from Messrs. Kelway & Son. Flowers bright red; centre white flaked with crimson.

To Gladiolus 'Penn' (votes, 6 for, 3 against), from Messrs. Kelway & Son. Large bright crimson flowers suffused with rosy purple towards the centre.

To Sidalcea malvæflora Listeri (votes, 11 for), from Mr. A. Lister, Rothesay. A variety (said to be new) with soft pink flowers.

To Clematis Viticella alba (votes, 13 for), from Messrs. Paul & Son. Flowers small, white flushed with rose.

Botanical Certificate.

To Calypsyche aurantiaca (votes, unanimous), from Messrs. F. Sander & Co., St. Albans.

Cultural Commendation.

To Mr. Burt, gardener to F. Reckitt, Esq., Caenwood Towers, Highgate, for a very large specimen of *Cycas revoluta*.

Other Exhibits.

Philip Crowley, Esq., Waddon House, Croydon (gr. Mr. Harris), sent a specimen of *Amorphophallus campanulata*.

T. Hamilton Fox, Esq., Keston, Kent, sent very fine blooms of a Clove Carnation 'Arthur Soames.'

Messrs. de Rothschild, Gunnersbury House, Acton (gr. Mr. Hudson), sent a beautiful collection of hardy Water Lilies.

Mr. C. Reynolds, Coolhurst Farm, Horsham, exhibited Dahlias

Mr. G. Kirlew, Warthill, York, sent some Carnations.

Mr. J. Wallace, Beechcroft, Streatham, sent blossoms of *Chrysanthemum* 'Lord Dalmeny.'

Messrs. Young & Dobinson, Stevenage, staged a group of cut flowers.

FLORAL COMMITTEE, AUGUST 25, 1896.

W. MARSHALL, Esq., in the Chair, and thirteen members present.

Awards Recommended:—

Gold Medal.

To Messrs. J. Veitch & Sons, Chelsea, for a very large and well-grown collection of *Nepenthes*, including such varieties as *Mastersiana*, *mixta*, *Rafflesiana*, *Hookeriana* and *elongata*.

Silver-gilt Flora Medal.

To Messrs. H. Cannell and Sons, Swanley, for *Asters* grown from home-saved seed, the flowers being large and of good substance and of many colours.

Silver Flora Medal.

To Messrs. Dobbie & Co., Rothesay, for a collection of *Asters*.

To Mr. T. S. Ware, Tottenham, for a group of hardy flowers.

Silver Banksian Medal.

To Messrs. R. Wallace & Co., Colchester, for a group of *Lilies* and *Tigridias*.

To Messrs. J. Peed & Sons, West Norwood, for a group of hardy flowers.

Bronze Banksian Medal.

To Messrs. Young & Dobinson, Stevenage, Herts, for a group of *Begonias* &c.

Award of Merit.

To *Gladiolus* 'Atlas' (votes, 9 for), from Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain). A grand variety with very large flowers of a delicate white suffused with rose and splashed with a deeper shade.

To *Gladiolus Lemoinei* 'Fustell de Coulanger' (votes, 6 for), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). Flowers large,

borne on very stout short spikes ; colour rosy carmine blotched with white in the throat.

To Lobelia 'Carmine Gem' (votes, 5 for), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). A very distinct variety of *L. cardinalis* with large bright carmine flowers.

To Campanula 'Profusion' (*C. carpatica* alba ♀ × *C. isophylla* alba ♂ (votes, unanimous), from Mr. E. H. Jenkins, Hampton Hill. A distinct variety with flowers of a pale blue colour. If the parentage of this plant is correctly recorded, it is a curious example of two white flowers producing a blue progeny.

To H. P. Rose 'Mrs. Rumsey' (votes, unanimous), from Mr. W. Rumsey, Waltham Cross. A vigorous growing variety, said to be mildew-proof. Flowers of good form and a lovely shade of bright pink.

To Caladium 'Donna Carmen Macedo' (votes, 12 for), from Messrs J. Laing & Sons, Forest Hill. Leaves heart-shaped, of good size ; colour dull red with prominent green veins.

To Begonia 'Louise Closon Improved' (votes, unanimous), from Messrs. J. Laing & Sons. A very fine ornamental foliage Begonia with large, deep, velvety brown leaves blotched with rosy purple.

To Cactus Dahlia 'Miss Webster' (votes, 9 for), from Messrs. Dobbie & Co., Rothesay. A free flowering variety of good habit. Petals large, broad, and pure white.

Other Exhibits.

Sir Trevor Lawrence, Bart., Dorking (gr. Mr. Bain), staged a collection of Gladioli and Pentstemons.

From Mrs. Elliott, Clifton Park, Kelso, came a small group of Carnations.

Lord Gerard, Eastwell Park, Ashford, Kent (gr. Mr. Walters), exhibited Gloxinias.

W. B. Monck, Esq., Coley Park, Reading (gr. Mr. Booker), sent *Chrysanthemum* 'James Booker.'

From T. W. Girdlestone, Esq., Sunningdale, Berks, came a beautiful collection of Single Dahlias.

Captain Holford, Westonbirt House, Tetbury (gr. Mr. Chapman), sent a Begonia named 'Captain Holford.'

Mr. H. Becker, Jersey, staged a fine specimen of *Amaryllis belladonna gigantea*.

Mr. Marcham, Spring Grove, Isleworth, sent a *Coleus* named 'Golden Feather.'

Mr. W. Potten, Cranbrook, sent a seedling *Helianthus*.

Mr. Hazelby, Hampton, staged a group of a very dwarf-growing Ivy-leaved *Pelargoniums*, *P. Moxoni*.

FLORAL COMMITTEE AT CHISWICK, SEPTEMBER 1, 1896.

JOHN FRASER, Esq., in the Chair, and six members present.

Awards Recommended:—

Highly Commended ($\times \times \times$).

To the strain of *Pentstemons* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain). A remarkably fine strain with very large flowers, the colours ranging from pure white through many shades of pink and rose to deep crimson.

To the strain of *Zinnia elegans* (votes, unanimous), from Messrs. Vilmorin & Co., Paris. Plants of vigorous compact habit and very floriferous. Flowers large, double, and of varied hues.

To *Antirrhinum* 'Scarlet' (votes, 4 for), from Messrs. Vilmorin & Co. Plants of very dwarf habit with medium-sized spikes of large bright crimson flowers.

To *Antirrhinum* 'Yellow Queen' (votes, unanimous), from Messrs. Dobbie & Co., Rothesay. Plants of good habit with large spikes of clear canary-yellow flowers. It stands drought well.

To *Chamæpeuce Sprengeri* (votes, unanimous), from Messrs. Barr & Son, Covent Garden. A very handsome Thistle-like plant of dwarf habit suitable for bedding purposes. Leaves long, narrow, bright green with a glaucous grey midrib; undersurface white.

To Dwarf *Chrysanthemum China Aster* 'Claret' (votes, unanimous), from Mr. Heinemann, Erfurt. Plants of dwarf, sturdy habit, with deep crimson, medium-sized flowers. Height 6 inches.

To *China Aster* 'Cinnabar Carmine' (votes, unanimous), from Mr. Heinemann. Plants of dwarf habit and very floriferous; flowers large; colour rich carmine. Height 7 inches.

To Comet China Aster 'Giant White' (votes, unanimous), from Messrs. Dobbie & Co. A magnificent variety with large well-formed pure white flowers borne in great profusion. Height 14 to 16 inches.

Commended (× ×).

To China Aster 'Triumph' (*syn.* Pæony-flowered 'Tom Thumb') (votes, unanimous), from Mr. Heinemann. A lovely variety of dwarf habit and very floriferous, some plants having as many as nine large fully expanded blooms out at one time; colour scarlet changing to crimson. Height 5 inches.

To Dwarf Chrysanthemum China Aster 'Fiery Scarlet' (votes, unanimous), from Mr. Heinemann. A very free-flowering variety with large flowers, colour bright scarlet tipped with crimson. Height 6 inches.

To Dwarf Chrysanthemum China Aster 'Rose' (votes, unanimous), from Mr. Heinemann. Plant of loose, straggling growth; flowers large; colour bright rose. Height 8 inches.

To Comet China Aster 'Light Blue' (votes, unanimous), from Mr. Heinemann. Plant of erect, sturdy habit, with very dark green foliage; flowers light blue shaded with violet. Very floriferous. Height 6 to 9 inches.

To Victoria China Aster 'White' (votes, unanimous), from Mr. Heinemann. Flowers well formed, white tinged with green in the centre. Very floriferous. Height 10 to 12 inches.

To Victoria China Aster 'White turning to Azure Blue' (votes, unanimous), from Mr. Heinemann. A very pretty variety. Flowers large, white running to a pretty shade of blue. Very floriferous. Height 10 inches.

To Dwarf Chrysanthemum China Aster 'Purplish Violet' (votes, unanimous), from Mr. Heinemann. A distinct variety with large purplish violet flowers. Height 6 inches.

FLORAL COMMITTEE, SEPTEMBER 8, 1896.

JOHN FRASER, Esq., in the Chair, and twenty members present.

Awards Recommended:—

Silver-gilt Flora Medal.

To Messrs. J. Burrell & Co., Cambridge, for one hundred and sixty-eight spikes of *Gladiolus*.

Silver-gilt Banksian Medal.

To Mr. Darnell, Devonshire House, Stamford Hill, for Crotons.

To Mr. S. Mortimer, Farnham, for Show and Cactus Dahlias.

To Messrs. J. Cheal & Sons, Crawley, for Show, Single, and Cactus Dahlias.

Silver Flora Medal.

To Earl Percy, Syon House, Brentford (gr. Mr. Wythes), for a superb and very large group of magnificent Nepenthes, together with foliage and flowering plants.

To Mr. J. T. West, Tower Hill, Brentwood, for Show, Pompon, and Cactus Dahlias.

To Messrs. R. Wallace & Co., Colchester, for a group of Lilies, Gladiolus, Montbretias and Tigridias.

To Messrs. J. Laing & Sons, Forest Hill, for a group of Crotons, Pandanus, Bertolonias, Streptocarpus, Gloxinias, and Odontoglossums.

To Mr. T. S. Ware, Tottenham, for Cactus and Decorative Dahlias.

Silver Banksian Medal.

To F. Reckitt, Esq., Caenwood Towers, Highgate (gr. Mr. Burt), for a group of Crotons, Caladiums, Palms, and Ferns.

To T. W. Girdlestone, Esq., Sunningdale, Berks, for forty-eight varieties of new Single Dahlias.

To Mrs. Salmon, Elder Road, West Norwood, for bouquets and vases of flowers.

To Mr. J. H. Witty, Nunhead Cemetery, S.E., for early flowering Chrysanthemums.

To Messrs. H. Jones & Son, Shrewsbury, for Dahlias arranged in vases.

To Messrs. Dobbie & Co., Rothesay, for Asters and Marigolds.

To Mr. T. S. Ware, Tottenham, for Chrysanthemums and Lilies.

Bronze Flora Medal.

To Mr. W. Salmon, Elder Road, West Norwood, for a group of hardy flowers.

First Class Certificate.

To Lobelia 'Carmine Gem' (votes, unanimous), from Sir

Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. Bain). See page clvii.

To *Polypodium neriifolium cristatum* (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. A vigorous growing variety with long arching deep green fronds, beautifully crested at the points.

To *Acidantha bicolor* (votes, unanimous), from Messrs. J. Veitch & Sons. A very handsome bulbous plant, carrying long spikes of creamy white flowers blotched with crimson.

To *Aralia triloba* (votes, unanimous), from Mr. W. Bull, Chelsea. A very graceful plant with long narrow bright green leaves.

Award of Merit.

To *Begonia odorata rosea plena* (votes, unanimous), from Sir Trevor Lawrence, Bart. (gr. Mr. Bain). A sweet-scented variety with pretty rose-pink flowers.

To Single Dahlia 'Trilby' (votes, unanimous), from T. W. Girdlestone, Esq. Flowers small, deep velvety crimson, heavily tipped with pink.

To Single Dahlia 'Jeanette' (votes, unanimous), from T. W. Girdlestone, Esq. Flowers blush-white margined with crimson.

To Single Dahlia 'Folly' (votes, unanimous), from T. W. Girdlestone, Esq. Flowers small, pink, edged and suffused with rose.

To Single Dahlia 'Polly Eccles' (votes, unanimous), from T. W. Girdlestone, Esq. Flowers rich orange-yellow flushed with crimson.

To Single Dahlia 'Naomi Tighe' (votes, unanimous), from T. W. Girdlestone, Esq. Flowers deep golden yellow shaded with crimson.

To *Helianthus annuus* 'Wantage Star' (votes, unanimous), from Lord Wantage, Lockinge Park, Wantage (gr. Mr. Fyfe). Flowers deep golden yellow. Very floriferous.

To *Adiantum Capillus-Veneris cuneiformis* (votes, unanimous), from Lady Emily Foley, Stoke Edith Park, Hereford (gr. Mr. Ward). A distinct variety, with long pendulous fronds of a pale green colour. A useful basket plant.

To *Dracæna Warreni* (votes, unanimous), from J. Warren, Esq., Hand Cross Park, Crawley (gr. Mr. Offer). A distinct and

handsome variety. Leaves long, narrow, and of a rich bronzy purple, beautifully margined with deep rose pink.

To *Campanula Balchineana* (votes, unanimous), from Messrs. W. Balchin & Sons, Hassocks, Sussex. A very bushy variety with glaucous green leaves margined with white. Flowers small pale blue.

To *Cactus Dahlia* 'Mrs. Leopold Seymour' (votes, unanimous), from Messrs. J. Cheal & Sons, Crawley. A very beautiful variety. Flowers yellow, outer petals suffused with rosy pink.

To *Cactus Dahlia* 'Harry Stredwick' (votes, unanimous), from Messrs. J. Cheal & Sons. Flowers large with long and twisted petals; colour deep maroon.

To *Cactus Dahlia* 'Mrs. Gordon Sloane' (votes, unanimous), from Messrs. J. Cheal & Sons. Flowers bright rosy carmine.

To *Pompon Dahlia* 'Adrienne' (votes, unanimous), from Mr. C. Turner, Slough. Flowers small; colour bright red tipped with yellow.

To *Pompon Dahlia* 'Phryne' (votes, unanimous), from Mr. C. Turner. Flowers canary-yellow tipped with reddish brown.

To *Pompon Dahlia* 'Dagmar' (votes, unanimous), from Mr. C. Turner. Flowers deep crimson. A handsome variety.

To *Pompon Dahlia* 'Guinevere' (votes, unanimous), from Mr. C. Turner. Flowers yellow, heavily tipped with orange scarlet.

To *Cactus Dahlia* 'Iona' (votes, unanimous), from Mr. C. Turner. Flowers large; petals sharply pointed; colour orange buff.

To *Show Dahlia* 'Daniel Cornish' (votes, unanimous), from Mr. J. T. West. Flowers very large, of good form; colour bright red flushed with orange.

To *Show Dahlia* 'Mabel' (votes, unanimous), from Mr. St. Pierre Harris, Orpington, Kent. Flowers large; colour rosy purple splashed with crimson.

To *Cactus Dahlia* 'Starfish' (votes, unanimous), from Messrs. Keynes, Williams & Co., Salisbury. Flowers clear orange yellow.

To *Cactus Dahlia* 'Cinderella' (votes, unanimous), from Messrs. Keynes, Williams & Co. Flowers of good form; colour reddish purple.

To Cactus Dahlia 'Flossie' (votes, unanimous), from Messrs. Keynes, Williams & Co. Flowers large; colour orange scarlet heavily shaded with purple.

To Cactus Dahlia 'Cycle' (votes, unanimous), from Messrs. Keynes, Williams & Co. Flowers large and of good form; colour bright crimson scarlet.

To Gladiolus 'Apollo' (votes, unanimous), from Messrs. Burrell & Co., Cambridge. A magnificent variety with large flowers; colour pale salmon-pink streaked with purple.

To Gladiolus 'Alicia' (votes, unanimous), from Messrs. Burrell & Co. Flowers large; colour delicate blush striped with rosy purple.

To Gladiolus 'Painted Lady' (votes, unanimous), from Messrs. Burrell & Co. A very handsome variety with large flowers; colour pale pink suffused and streaked with rosy pink.

To Cactus Dahlia 'Fantasy' (votes, unanimous), from Messrs. Burrell & Co. A distinct variety with long, narrow, sharply pointed petals; colour rich orange scarlet.

Other Exhibits.

Lord Wantage Lockinge Park, Wantage (gr. Mr. Fyfe), sent a small collection of Sunflowers.

W. H. Evans, Esq., Forde Abbey, Chard (gr. Mr. Crook), sent some Nerines.

The Earl of Dysart, Ham House, Richmond (gr. Mr. Sage), sent specimens of Aster 'J. Harris.'

Mr. Alderman, Sparken, Worktop, sent a very pretty Cactus Dahlia named "Alderman's Favourite."

Mr. C. Holden, Hinckley, sent a group of trained Ivy-leaved Pelargoniums.

Mr. B. Ladhams, Southampton, sent a small group of Heliopsis and Pinks.

Mr. J. W. Perry, Hockley, Essex, sent some Dahlias.

Messrs. Young & Dobinson, Stevenage, exhibited a group of Begonias, Gaillardias, and Phloxes.

Messrs. G. Bunyard & Co., Maidstone, sent *Centaurea americana*.

Messrs. T. Cripps & Son, Tunbridge Wells, sent a Decorative Dahlia named 'Persimmon.'

Mr. J. Green, Dereham, sent two Seedling Dahlias.

ORCHID COMMITTEE.

JULY 14, 1896.

HARRY J. VEITCH, Esq., in the Chair, and twenty members present.

Awards Recommended:—

Award of Merit.

To *Cattleya Mossiæ* 'Brilliance' (votes, 8 for, 6 against), from Messrs. Hugh Low & Co., Clapton. A very dark and brightly coloured variety.

To *Zygopetalum grandiflorum* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White).

Botanical Certificate.

To *Catasetum Russellianum*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Masdevallia Carderii*, from the Honble. Walter Rothschild, Tring Park, Tring (gr. Mr. E. Hill).

To *Masdevallia corniculata*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).

To *Oncidium virgulatum*, from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White).

Cultural Commendation.

To Mr. E. Hill, gr. to the Right Honble. Lord Rothschild, Tring Park, Tring, for a fine example of *Cattleya Warscewiczii* Shuttleworthii, with six handsome flowers on a spike.

To Messrs. F. Sander & Co., St. Albans, for *Cœlogyne Sanderiana*, with six spikes.

Other Exhibits.

The Right Honble. Joseph Chamberlain (gr. Mr. Burberry), Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), and C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan) sent several varieties of *Cattleya Warscewiczii* and other Orchids.

Sir Trevor Lawrence, Bart., exhibited a group of *Cattleya Eldorado* and other Orchids.

W. Thompson, Esq., Walton Grange, Stone, Stafford (gr. Mr. W. Stevens), sent several *Odontoglossums*.

Reginald Young, Esq., Sefton Park, Liverpool, called the attention of the Committee to a list of hybrid *Cypripediums* arranged on an excellent system for keeping records in future.

J. Wilson Potter, Esq., Parkhill Road, Croydon, sent *Aëranthus grandiflorus*, with several spikes of large white flowers.

Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr. Mr. W. Murray), showed *Phaius Humblotii* and *P. Henryii*, the latter of a clear light rose colour.

Edgar Cohen, Esq., Hall Road, St. John's Wood (gr. Mr. A. Vass), showed *Cattleya Mendelii* 'Mrs. E. Cohen,' a pretty white form with rose spot on the lip.

Reginald Young, Esq., Fringilla, Linnet Lane, Sefton Park, Liverpool, sent blossoms of *Cypripedium Stonei candidum* and of *C. × Harrisianum superbum*.

Messrs. F. Sander & Co., St. Albans, sent *Spathoglottis plicata Micholitzii*, a purple flowered dwarf-growing variety.

The Right Honble. Lord Rothschild (gr. Mr. E. Hill) sent *Cattleya labiata Gaskelliana alba*.

ORCHID COMMITTEE, JULY 28, 1896.

HARRY J. VEITCH, Esq., in the Chair, and eleven members present.

Awards Recommended :—

Silver Banksian Medal.

To Messrs. Thomas Cripps & Son, Tunbridge Wells, for an excellent group of *Disa grandiflora*.

First Class Certificate.

To *Cattleya × Atalanta* (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. Sepals and petals rose-veined with purple. Lip (resembling that of *C. Leopoldii*) bright magenta purple.

Award of Merit.

To *Cypripedium × Harrisander* (*C. × Harrisianum × C. Sanderianum*) (votes, unanimous), from W. C. Clark, Esq., Orleans House, Sefton Park, Liverpool. A distinct hybrid with greenish white upper sepal ornamented with feathered chocolate

purple lines and dots. Petals brownish rose, with blackish purple spots. Lip shining dark-red brown.

To *Masdevallia* × *Ajax* (*M.* × *Chelsoni* × *M. Peristeria*) (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. Flowers yellow with purple brown tails and numerous purple papillæ on the surface. Lip purple.

To *Odontoglossum aspidorhinum* (votes, 7 for, 2 against), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A species with graceful racemes of rather small yellow and brown flowers with comparatively large panduriform white lips blotched with purple. Allied to *O. Sanderianum* and *O. constrictum*.

Botanical Certificate.

To *Dendrobium curviflorum* (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking. A species with compressed growths and curiously boat-shaped white flowers, with a yellow blotch on the lip.

Other Exhibits.

Sir Trevor Lawrence, Bart., also exhibited *Maxillaria Hübschii*; *Masdevallia infracta purpurea* (a pretty plant bearing twenty flowers); *Dendrobium revolutum*, the flowers of which had been open more than three months; and *Cypripedium* × *Chas. Steinmetz* (*C. philippinense* × *C. Lawrenceanum*).

Walter C. Clark, Esq., Sefton Park, Liverpool, exhibited *Cypripedium* × *Mabellæ* (*C. superbiens* × *C. Rothschildianum*).

Major Mason, The Firs, Warwick, sent a flower of *Cymbidium Parishii*.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), exhibited his large deep rose-coloured form of *Miltonia vexillaria*.

Messrs. Jas. Veitch & Sons, Chelsea, exhibited *Cypripedium* × *Brysa* (*C. Boissierianum* × *C.* × *Sedeni candidulum*).

Messrs. Lewis & Co., Southgate, N., sent *Cattleya granulosa Schofieldiana*.

Messrs. F. Sander & Co., St. Albans, exhibited *Cypripedium* × *A. de Lairese*, *C.* × *Patersoni*, *C.* × *A. R. Smith*, *C.* × *Massaianum*, *C.* × *Lord Derby*, *Calanthe* × *Lauchiana*, *Acropora luteola*, *Aganisia ionoptera*, *Pholidota obovata*, &c.

ORCHID COMMITTEE, AUGUST 11, 1896.

HARRY J. VEITCH, Esq., in the Chair, and fourteen members present.

Awards Recommended:—*Bronze Banksian Medal.*

To R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. J. Chapman), for a group of Orchids, in which the genus *Masdevallia* was well represented.

First Class Certificate.

To *Cattleya* × *Hardyana splendens* (votes, unanimous), from Baron Schröder, The Dell, Staines (gr. Mr. H. Ballantine). This is a fine variety, the large labellum resembling that of a good *C. Dowiana*, and the sepals and petals that of *C. Warscewiczii*. Its scent was also very fine.

Award of Merit.

To *Cypripedium* × *Excelsior Mars* (*C.* × *Harrisianum* × *C. Rothschildianum*) (votes, 7 for, 6 against), from Messrs. F. Sander & Co., St. Albans. A pretty hybrid of the *C.* × *Massaianum* class, but with more distinct chocolate spotting than in others of its class.

To *Lælio-Cattleya* × *elegans Cawenbergiana* (votes, unanimous), from Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. W. H. Young). A large rose-tinted variety in which the base and the greater part of the side lobes of the lip are white.

To *Lælio-Cattleya* × *Seraph* (*L.-C.* × *elegans* ♀ × *C. citrina* ♂) (votes, unanimous). A singular hybrid having short cylindrical pseudo-bulbs, much swollen in the middle and rather erect and stiff foliage. The inflorescence is ascending, and the general form of the flower as in *L.-C.* × *elegans*, but smaller in size. The sepals and petals were yellow; lip rose-crimson in front and white at the base.

Botanical Certificate.

To *Masdevallia anchorifera*, from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman).

Other Exhibits.

Baron Schröder (gr. Mr. H. Ballantine) showed *Lælio-*

Cattleya × *Sedeni* (L.-C. × *elegans* × *C. superba*); L.-C. × *elegans*, Veitch's variety; and L.-C. × *elegans* *Morreniana*.

Sir Frederick Wigan (gr. Mr. W. H. Young) showed *Lælio-Cattleya* × *elegans* with ten flowers on a spike.

Sir William Marriott, Down House, Blandford, sent *Cattleya* × *Marriottiæ* (*C. Eldorado* × *C. Warszewiczii*). The plant had a five-flowered inflorescence, the flowers resembling those of *C. Eldorado splendens*, but slightly larger.

Messrs. F. Sander & Co., St. Albans, staged a good group of Orchids of the season.

A. Singleton, Esq., Chapel-en-le-Frith, sent *Cypripedium* × *Singtonianum* (*C.* × *vexillarium* × *C. barbatum* *Warnerii*), which closely approaches some of the forms of *C. barbatum*; and a spike of *Lælia crispa*.

Pantia Ralli, Esq., Ashted Park, Surrey, showed *Sobralia Lowii* and *Odontoglossum aspidorhinum*, Ralli's var. The variety served to show the absolute distinctness of the species, the large white crimped lip being profusely spotted with rose-crimson, and totally unlike *O. constrictum*, *O. Sanderianum*, and others whose flowers the species more nearly resembles in its poorer forms.

Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, showed a splendid form of *Cattleya labiata* *Gaskelliana alba*, and *Cattleya* × *Kienastiana* (*C. Luddemanniana* × *C. aurea*).

Reginald Young, Esq., Fringilla, Linnet Lane, Liverpool (gr. Mr. Poyntz), sent blossoms of *Lælia crispa* *Buchaniana*, *Lælio-Cattleya* × *elegans* *Turneri*, L.-C. *elegans* *Houtteana*, and *Cattleya velutina*.

A. H. Milton, Esq., White Ladies Road, Clifton, sent *Cattleya Loddigesii* and a striped form of *Cattleya labiata* *Gaskelliana*.

ORCHID COMMITTEE, AUGUST 25, 1896.

HARRY J. VEITCH, Esq., in the Chair, and six members present.

Awards Recommended:—

Silver Flora Medal.

To J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), for an excellent group of Orchids.

Silver Banksian Medal.

To Messrs. Hugh Low & Co., Clapton, for a fine group of Orchids.

First Class Certificate.

To *Lælio-Cattleya* × *Brymeriana* (L.-C. × *amanda* × *C. Warscewiczii*) (votes, unanimous), from Col. Brymer, Ilington House, Dorchester (gr. Mr. Powell). The general appearance of the five-flowered inflorescence of this hybrid was that of a large and richly coloured *Cattleya maxima*, but the labellum was more ample than in that species, and had a closer network of bright purple.

Award of Merit.

To *Cycnoches maculatum* (votes, unanimous), from the Honble. Walter Rothschild, Tring Park, Tring (gr. Mr. E. Hill). A fine specimen of this rare old species, the drooping raceme being 15 inches in length.

To *Miltonia Schröderiana* var. (votes, unanimous), from the Honble. Walter Rothschild (gr. Mr. E. Hill). The major variety, with growths as strong as *Odontoglossum Harryanum*, and much resembling it, was shown.

To *Miltonia candida grandiflora* (votes, unanimous), from Major Joicey, Sunningdale Park, Sunningdale (gr. Mr. Fred. J. Thorne). The plant was a fine variety with three strong spikes.

To *Stanhopea eburnea* (votes, unanimous), from Major Joicey. This rare old species bore white flowers with purple markings on the lip. For comparison the newer white *S. Lowii Amesiana* was shown.

To *Lælia monophylla* (votes, unanimous), from Major Joicey. A strong plant with many orange scarlet flowers was shown, one inflorescence bearing two blooms.

To *Dendrobium longicornu* (votes, unanimous), from W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens). The specimen sent was a large one covered with flowers, and well represented the pretty species.

To *Cœlogyne Micholitzii* (votes, unanimous), from T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter). A fine species bearing some resemblance to *C. speciosa*.

Botanical Certificate.

To *Bulbophyllum* species, Borneo, from the Honble. Walter

Rothschild, Tring Park, Tring (gr. Mr. E. Hill). An extraordinary species with creeping rhizome, very rudimentary pseudo-bulbs, fleshy ovate leaves, and flowers of the size of those of *B. Lobbii*. The colour was yellow with closely set chocolate lines. The curious hinged lip was prolonged in front to a narrow tongue which, when it tipped forward, curved under the mentum formed by the base of the lower sepals.

To *Catasetum callosum*, from Messrs. Hugh Low & Co., Clapton.

Cultural Commendation.

To Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, for *Lælio-Cattleya* × *elegans* *Cawenbergiana*, with two spikes.

To Mr. W. H. White, gardener to Sir Trevor Lawrence, Bart., for *Habenaria carnea* and *H. c. nivosa*.

Other Exhibits.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), exhibited an interesting group of Orchids in which were fine specimens of *Eria stellata*, *Epidendrum alatum*, *E. Fournierianum*, *Habenaria carnea* and its white variety, *Maxillaria fucata*, *Rhyncostylis retusa*, *Cypripediums*, &c.

Messrs. Jas. Veitch & Sons, Chelsea, sent *Lælio-Cattleya* × *Clonia* (*C. Warscewiczii* × *L.-C. elegans*).

Messrs. F. Sander & Co., St. Albans, showed *Lælio-Cattleya* × *Gottoiana*.

Messrs. B. S. Williams & Son, Holloway, sent *Brassia brachiata*.

Reginald Young, Esq., Liverpool (gr. Mr. Poyntz), showed *Cypripedium* × *Ashburtoniæ expansum*, Cookson's variety, and *C. × Atropus*.

Major Joicey, Sunningdale Park, Sunningdale (gr. Mr. Fred. J. Thorne), showed a fine *Anguloa eburnea*, *Odontoglossum aspidorhinum*, and other Orchids.

Mr. J. W. Moore, Bradford, sent *Cymbidium aloifolium*.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), sent *Lælio-Cattleya* × *Schilleriana*, Statter's var., *L.-C. × elegans Johnsoniana*, and *Cypripedium* × 'Excelsior' (*C. Rothschildianum* × *C. × Harrisianum*).

ORCHID COMMITTEE, SEPTEMBER 8, 1896.

HARRY J. VEITCH, Esq., in the Chair, and thirteen members present.

Awards Recommended :—*Silver Flora Medal.*

To Messrs. J. Veitch & Sons, King's Road, Chelsea, for a group of Orchids in which were *Lælio-Cattleya* × *callistoglossa ignescens*, L.-C. × *Nysa*, L.-C. × *Pallas*, *Sobralia* × *Veitchii*, &c.

Silver Banksian Medal.

To Messrs. B. S. Williams & Son, Upper Holloway, for a group containing *Pachystoma Thompsonianum*, *Pescatorea Lehmannii*, *P. Klabochozum*, and other rare species.

First Class Certificate.

To *Lælio-Cattleya* × 'Charles Darwin' (L.-C. × *elegans* × *C. maxima*) (votes, unanimous), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond). This was the plant which was given an Award of Merit on August 27, 1895, but which being much improved now received the higher award.

To *Lælio-Cattleya* × 'Clive' (*L. præstans* × *C. Dowiana*) (votes, 8 for, 1 against), from Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray). This plant very much resembles L.-C. × *Ingramii* (*L. Dayana* × *C. Dowiana*) first shown by Mr. Cookson at the Society's Meeting, August 29, 1893, and the L.-C. × *Broomfieldiensis* shown in August 1894.

To *Arachnanthe Lowei* (votes, unanimous), from Messrs. B. S. Williams & Son, Holloway, N. The plant bore the usual long raceme of flowers with the yellow basal ones, which it is said are the only ones that can be set for seed.

To *Miltonia spectabilis Moreliana*, 'Dulcote variety' (votes, 8 for, 1 against), from Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howes). A very large and richly coloured variety.

Award of Merit.

To *Maxillaria striata grandiflora* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. Flowers of the *M. grandiflora* form, whitish, striped with chocolate and purple.

To *Cattleya bicolor Lewisii* (votes, unanimous), from Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr.

Holbrook). Sepals and petals emerald green; lip white with rose tint at the base beneath the column.

To *Lælio-Cattleya* × 'Bryan' (*C. Gaskelliana* × *L. crispa*) (votes, unanimous), from Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Wm. Murray). A pretty flower with some resemblance to *L. C. × exoniensis*.

To *Cattleya* × 'Euphrasia' (*C. Warscewiczii* ♀ × *C. superba* ♂) (votes, unanimous), from Messrs. James Veitch & Sons, King's Road, Chelsea. A fine hybrid with bright rose-coloured sepals and petals, and a labellum as showy as that of *C. Warscewiczii*; bright purple crimson in front, chrome yellow in the centre, and with dark red lines radiating from the base.

To *Lælio-Cattleya* × *elegans* *Oweniæ* (votes, 8 for, 1 against), from Thomas Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson). The flowers were of a uniform rosy crimson with white base to the lip.

Cultural Commendation.

To Mr. H. Ballantine, gr. to Baron Schröder, The Dell, Staines, for a fine plant of the pretty *Sophro-Cattleya* × *Veitchiana*, which had previously received a First Class Certificate.

Other Exhibits.

Norman C. Cookson, Esq., Oakwood, Wylam, showed two plants of *Cattleya* × *Hardyana* (*C. Warscewiczii* × *C. Dowiana*), in which the Costa Rica form of *C. Dowiana* was used instead of the Columbian. The hybrid differed in form from the imported variety, but was, in its immature state, lighter in colour. This cross effectually proves the hybrid origin of the imported forms of *C. × Hardyana*.

Elijah Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), sent a fine form of *Cattleya* × *Hardyana* and a pale variety of *Cypripedium* × *Mabellianum*.

G. O. Sloper, Esq., Westrop House, Highworth, Wilts, sent *Cypripedium* × *polystigmaticum*.

Walter Cobb, Esq., Tunbridge Wells (gr. Mr. J. Howes), showed *Odontoglossum Oerstedii* major.

Welbore S. Ellis, Esq., Hazelbourne, Dorking, sent *Oncidium panduratum* (*Rolfe*), with brown flowers somewhat resembling those of *O. anthoerene*, and *Stanhopea oculata*.

G. Shorland Ball, Esq., Ashford, Wilmslow (gr. Mr. Hey), sent *Cypripedium insigne* *Balliæ*, a yellow form with a very faint indication of the usual spotting on the upper sepal.

EXTRACTS FROM THE PROCEEDINGS

OF THE

ROYAL HORTICULTURAL SOCIETY.

GENERAL MEETING.

OCTOBER 13, 1896.

Mr. JAS. DOUGLAS in the Chair.

Fellows elected (26).—John Stanhope Arkwright, Lord Henry Bentinck, M.P., W. Bowles, John Brydon, William Bythway, George Culver, John Ettle, Frank Harris, Prestley Hogbin, John H. Knowles, Mrs. H. B. Langham, C. J. Mee, N. M. Mitra (India), Miss S. Morris, M. S. Morrison, Mrs. W. J. Noy, Charles Oliver, Felix B. Parfitt, B. C. Roberts, J. D. Robertson, William Shingles, Walter P. Smith (South Africa), Richard S. Smith (South Africa), W. Troughton, A. W. G. Wright, and Daniel Yeoward (Fiji Islands).

A Paper on "Hardy Summer Flowers," by Mr. E. Burrell, was read by the Assistant Secretary. (*See* p. 266.)

GENERAL MEETING.

OCTOBER 27, 1896.

Mr. C. E. SHEA in the Chair.

Fellows elected (14).—Joseph H. Annear, Austin Campbell-Johnston (California), Mrs. A. Cates, James D. Stretch-Dowse (Jamaica), Thomas Duck, Frank Hannaford (Australia), W. Jude, Charles J. Langley, Alfred P. Puckridge, Willott Rice,

Mrs. Arthur Shanks, Miss Tilley, George Sherman, and W. H. Young.

Society affiliated (1).—Much Hadham Horticultural Society.

A Paper on "Chrysanthemums," by Mr. W. H. Lees, was read by the Assistant Secretary. (See p. 273.)

GENERAL MEETING.

NOVEMBER 10, 1896.

Rev. W. WILKS, M.A., in the Chair.

Fellows elected (6).—Cæsar Czarnikow, A. Dale, Sir Charles Elliott, Rev. H. F. Goffe, William Laing, and W. J. Townsend.

Society affiliated (1).—National Cactus Society.

A Paper on "Seed-growing" was read by Mr. R. Fife. (See p. 283.)

GENERAL MEETING.

NOVEMBER 24, 1896.

Mr. C. E. SHEA in the Chair.

Fellows elected (11).—Frau Ida Brandt, William Bygrave, Thomas B. Gabriel, Henry T. Julian, Frederick Langford, E. A. Merryweather, Mrs. Batten Pooll, Alfred E. Prince, A. Richards, R. G. Thwaites, and the Hon. Frederic Wallop.

The Rev. Prof. Henslow gave a Conversational Lecture on some of the most interesting plants exhibited. (See p. 294.)

GENERAL MEETING.

DECEMBER 15, 1896.

Dr. E. BONAVIA in the Chair.

Fellows elected (21).—Mrs. Annesley, Mrs. Arber, Miss E. Boodle, A. J. Carter, Mrs. E. B. Foster, W. H. Gray, W. Green, W. G. Hatch, Rev. E. W. Jones, H. Morris, W. Murton, J. G. Neame, J. F. C. Phillips, Edgar Price, Asher Rake, David Saunders, Mrs. Sheppard, W. G. Soper, Thomas Taylor, Mrs. E. Thwaites, and J. T. West.

Associate (1).—Charles Forbes.

SCIENTIFIC COMMITTEE.

OCTOBER 13, 1896.

Dr. BONAVIA in the Chair, and five members present.

Vines Diseased.—The following communication has been received since the last meeting from Mr. Messenger, Woolverstone Gardens, Ipswich :—" I enclose a bunch of Black Alicante Grapes and two leaves, one of Black Alicante, the other of Gros Colmar. I am desirous of knowing the cause of the discoloration of the stem, footstalk, and berry, and why the leaves are dying at one particular place ; and, further, what remedy I should apply." The following report has been received :—" The foliage, leafstalk, and also stalks and some of the berries appear to be infested with fungi, which I believe to be *Peronospora viticola*, which I have seen attack vines in the same way as those received. The leaves first develop whitish patches and then dry up, and the leafstalks are similarly affected. It would be advisable to thoroughly scrub or paint the interior of the house, limewash the walls, and remove the surface of the border, to eradicate any germs. It would also be advisable to see that the border is sweet and properly drained."—S. T. W.

Potatos Diseased.—Samples were received from Mr. H. S. Bartleet, F.R.H.S., of Severndroog, Shooter's Hill, characterised by having spots within them. They proved to be a form of the ordinary potato disease, *Peronospora infestans*.

Monstrous Structures.—Mr. C. Browne, of Hextable, Kent, forwarded a fasciated form of *Campanula*, probably the result of over-nutrition ; a three-sided French Bean pod, due to the union of three carpels out of the typical number five ; and a double Apple, the result of synanthly, or the union of the carpels of two flowers combined.

Apple with Red Flesh.—Mr. Henslow showed specimens of the red Apple, known as " The Ten Commandments," described in Dr. Hogg's " Fruit Manual." The name is derived from the ten red spots of the fibro-vascular cords passing through the apple, the flesh of which is more or less of a crimson hue throughout. It is a Herefordshire apple, and according to Mr.

S. T. Wright, superintendent of Chiswick Gardens, is more elongated than usual. It was received from Zeals (a village on the borders of Wilts and Somerset), where there are two trees near each other, very old, and 9 feet in circumference at a height of 3 feet from the ground. Nothing is known of the history of these trees. The question was raised as to the *form* of the apple being due to the *locality* where the tree grew, as Mr. Bailey has lately published a book* showing how different kinds of apple trees, though raised from grafts, often produce the same form of fruit when growing in the same States of North America. Mr. Wright informed Mr. Henslow that the importance of knowing the locality in England whence an unnamed apple was received had been already felt by himself, as it had also been by Dr. Hogg.

Experiments with Salts and Pelargonium.—The following reports were received from the Rev. W. Wilks and Dr. Russell. The general result of the action of salts used upon the white flowers was *nil*, but with cobalt an effect was noticeable on the leaves, in that the fibro-vascular cords remained of a dark colour, the interstices being yellow-green. This was the case with Mr. Wilks's plant, and to a less extent with Mr. Henslow's. They had pursued the same course as described by Dr. Russell, but with no other positive result. All the plants flowered well, and were perfectly healthy.

Dr. W. F. Russell reported as follows :—

“ Ten white *Pelargoniums* were received from Messrs. Cannell & Sons. They were all strong, healthy plants. Experiments commenced on June 20. All the plants were taken out of their pots, the soil gently shaken off, and then repotted. Two of the plants were repotted in ordinary good soil, the others in soil which had been thoroughly drenched with a solution of one of the following salts, all of them being of the same strength, viz. 13 grains to the pint: sulphate of iron, sulphate of copper, nitrate of cobalt, nitrate of nickel, acetate of chromium, sulphate of manganese, nitrate of zinc, and chloride of ammonium. They were kept in a conservatory and were watered with the respective solutions, containing $6\frac{1}{2}$ grains to the pint. It was found that the lime in the water used was precipitated by the sulphates, and so carried down some of the metal; consequently, on June 30, the sulphate of manganese was changed for the chloride, the

* “The Survival of the Unlike,” p. 99.

sulphate of iron was changed for perchloride of iron, and the sulphate of copper was dissolved in distilled water. The plants were watered to the same extent that they would have been under ordinary conditions of growth. August 1.—All the plants are now in flower. All the flowers are quite white, and all the plants are quite healthy. September 1.—All the plants are quite healthy, and there is no visible difference between them. October 1.—All the plants are quite healthy, and still there is no visible difference between them.”

The Rev. W. Wilks reported thus:—“On June 24 ten plants of a white-blooming Zonal Pelargonium were received. They were all treated exactly as described in Dr. Russell’s report. After the plants were repotted they were for four days placed under the stage of a close fern house, and then brought up on to the stage of a very light and airy greenhouse, where they have stood till this date, October 13. At the commencement plants 1, 3, 4, 5, 7, and 8 were somewhat stronger than 2, 6, 9, and 10, 9 and 10 being the two to which nothing was added, and which have been watered with ordinary water. Each plant has had about 20 pints of fluid. Results:—None of the plants flagged at all from the repotting, beyond losing one or two of the lower leaves. All have bloomed well throughout the whole of the season, and are still carrying fine trusses. No. 1 lost one limb from mildew, but this was probably the result of pure accident, and should not be attributed to the special treatment. It has since made new growth, which is stronger and more vigorous, and the foliage distinctly larger than any of the others. Nos. 2, 8 are rather stronger, and the foliage darker than the remainder. No. 7 has every leaf showing all the veins and fibres dark green and the interspaces clear pale yellow; the leaves are also somewhat small, but otherwise they are crisp and look perfectly healthy. The colour of the flowers does not appear to have been in any case or in the smallest degree affected.”

“The numbers refer to the different salts with which the respective plants were watered, viz.: 1. Ammonium sulphate; 2. Zinc nitrate; 3. Copper sulphate; 4. Chromium acetate; 5. Manganese chloride; 6. Iron perchloride; 7. Cobalt nitrate; 8. Nickel nitrate.”

Rev. W. Wilks’s Experiments with Apples.—Three young Cox’s Orange Apple trees were chosen, situated on one border, a

distance of eight yards separating each tree from the next. Tree A was dressed with 1 lb. of soot on April 1, May 1, June 1 and 15, July 1 and 15, August 1 and 15. Tree C was, on the same dates, dressed with $2\frac{1}{2}$ oz. of sulphate of ammonia. The dressing was scattered on the ground within compass of the spread of the tree's branches, and the ground was then immediately raked over hardly, so as to stir the surface. Tree B was undressed, but similarly raked on each occasion. The fruit was gathered on September 21, and on examination on October 12 it was found that the produce of tree C was very slightly the highest coloured, no difference whatever being apparent between the produce of A and B. It was decided to continue this experiment next year, 1897.

SCIENTIFIC COMMITTEE, OCTOBER 27, 1896.

Dr. M. T. MASTERS, F.R.S., in the Chair, and five members present.

New Carnation Disease.—Mr. Douglas exhibited specimens of Carnation plants badly attacked by a species of bacterium, giving a silvery appearance to the leaves. It had previously proved to be very destructive in America, and it is probable that it will now be so here. If the leaves are cut away when first attacked the disease may be arrested, but the only remedy if it be more severe is to burn the plants. The fungus attacks the middle of the leaf, and then spreads both ways.

Chrysanthemum Malformed.—Mr. Jenkins, of Hampton, sent a specimen of 'Madame Desgranges' in which the white ray florets were almost entirely suppressed. The flowers sent were borne by one plant only, which was growing in the same pot with another of the same name; but while all the flowers on the one plant were malformed, all on the other were very good. No disease being apparent, it appeared that the latter plant had withdrawn the nourishment from the soil at the expense of the former, which was consequently starved.

Primula obconica cross.—Dr. Masters exhibited a truss and leaf of a plant raised by himself by crossing *P. obconica* with *P. sinensis* (wild form). The offspring, beyond a slight decrease

in hairiness, could not be distinguished from the female parent.

New Palm.—He also showed a photograph of a Palm new to cultivation, received from the late Baron von Müller, who wrote as follows:—"In 1892 I described the 'Beatrice Palm,' then discovered by Mr. Eugène Fitzalan on Mount Elliott, in N.E. Queensland (*Ptychosperma Beatricæ*). It is allied to *P. Alexandræ*, but is remarkable for the wide enlargement towards the base of the stem, with step-like processes. It differs also in the much less hardness of the stem, and in the leaves being almost straight to the summit, besides in having smaller fruits and other minor characteristics."

Curious Melon.—He also showed a photograph of a Melon fruiting from the unusual position of the "collar," *i.e.* at the junction between the root and the stem.

Nitragin.—It was suggested that this new material, containing bacteria for fertilising the soil where leguminous plants are grown, should be experimented with at Chiswick.

Hypertrophy of Tropæolum.—Dr. Masters also showed a dense globular mass of abortive shoots which had grown at the base of the stem, probably in consequence of some injury to the collar. Such abnormal outgrowths are not uncommon in *Pelargonium*, which are allied to *Tropæolum*.

SCIENTIFIC COMMITTEE, NOVEMBER 10, 1896.

R. McLACHLAN, Esq., F.R.S., in the Chair, and five members present.

Carnation Disease.—In reference to the diseased Carnations exhibited on October 27, Mr. J. Douglas wrote saying the disease was caused by *Bacterium Dianthi*, Arthur, and that the disease was known in the United States as bacteriosis. Mr. Massee, of Kew, says, "Plants, if strong and healthy, may be kept free from the disease by keeping the foliage dry, and preventing the presence of aphides. Overhead spraying should be done only occasionally on bright days, the water containing only a small amount of ammoniacal copper carbonate."

Abnormal Cattleya.—Mr. E. St. John Tucker, Sydenham, sent a pseudo-bulb of *Cattleya labiata autumnalis*, which instead

of developing a flower had produced six sheaths, one within the other, from the apex of the pseudo-bulb. Mr. Tucker thought a maggot might have been the cause of the freak, but beyond a small hole in the outer sheath there were no signs of insect attack.

Fertilising Bee of Catasetum tridentatum, Hook.—Specimens of this bee, which had been sent to Kew by Mr. Hart, of the Botanic Gardens, Trinidad, were exhibited. They were of a metallic shining emerald-green colour, and somewhat larger and rounder than an ordinary house fly. The name of the bee is *Chrysantheda nitida*. It is a native of S. America.

Mustard Beetle.—A box of living beetles known as *Phædon cochleariæ* was exhibited. These beetles devour crops of mustard in the eastern counties, and are very destructive.

Swede Turnip with "Fingers and Toes."—Mr. Jas. Long, of Wisbech, sent a specimen of Swede affected with this myxomycetous disease, *Plasmodiophora Brassicæ*. It was stated that there would be a group of fifty or sixty plants affected with the disease in a crop of several acres, and no particular notice was taken. In fact, the diseased plants were allowed to produce seeds, which afterwards developed healthy plants.

Colour Experiments.—It was decided that Dr. Russell, Professor Henslow, and the Rev. W. Wilks should use some of Judson's dyes, with a view to their absorption by the roots of Hyacinths under experiment.

SCIENTIFIC COMMITTEE, NOVEMBER 24, 1896.

A. B. MICHAEL, Esq., in the Chair, and four members present.

Award Recommended :—

Botanical Certificate.

To *Primula sinensis* (wild species improved). Votes, unanimous. From E. Hyde, Esq., Ealing.

The Recent Differentiation of the Wheat Mildews.—The following interesting communication was received from Dr. Plowright :—

“ *On the Recent Differentiation of the Wheat Mildews.*—We are all familiar with what is known to us in Great Britain as the Wheat Mildew *par excellence*, *Puccinia graminis*. Curiously enough during the past season (1896) it has been practically absent from our corn fields. The only specimens I have seen have been upon *Triticum repens*, and on barley. These were only found after careful searching in the immediate neighbourhood of one of the few barberry bushes growing semi-wild in a hedge a few miles from King’s Lynn. Not more than a dozen barley plants affected with the fungus could be found, and they were within a yard or two of the æcidial host plant. During the last year or two Professor Eriksson, of Stockholm, working in conjunction with Dr. E. Henning, has succeeded in elucidating the morphology of the fungi which produce the so-called ‘rust’ of wheat. Rust, of course, is a collective name applied to any *uredo* with a yellow or orange colour occurring upon cereals generally. We have hitherto recognised a *Puccinia* on wheat and other grasses, characterised by the yellow colour and profusion of its uredospores, and have known it as *P. rubigo-vera* or *P. straminis*. From the investigations of the above botanists it is clear that there are two distinct and well-marked species confounded under these names. They now call them *P. glumarum*, Schinn, and *B. dispersa*, E. and H.

“ *Puccinia glumarum* is the most important from an economic point of view, as it is apt to attack not only the leaves and sheaths of the wheat plants, but also the glumes, and, as a natural sequence, the grain itself. When this is the case the uredospores constitute the old *Trichobasis* or *Uredo glumarum*, and may be readily enough seen by pulling apart the glumes of the affected ears. They look as if a little golden dust had found its way into the ear, some of which adheres to the glumes, while some is dusted upon the young kernel. That the ‘rust’ was injurious to wheat when it attacked the ear has been known to agriculturists for long, and it is only under these circumstances that rust does our wheat crops any appreciable amount of harm. This rust, it should be remarked, is quite distinct from the rust which does so much injury to the wheat-grower of Australia. To us the injury consists in a dwarfing of the affected kernels which the *uredo* and its associated teleutospore cause. On the leaves of the wheat the

uredospores of *P. glumarum* make their appearance very early in the life of the plant; in early winter it may be found, but especially in spring. The quantity of these uredospores is very great, and the rustiness of the plants very striking; but, strange to say, our wheat-growers do not look upon it with much disfavour at this season, for it is often said to do more good than harm by checking the too luxuriant growth of the plant. But we may be sure that whatever good it may effect in this direction is more than counterbalanced by the injury it does the grain itself later on in the year. The *uredo* is very conspicuous, because, although the spore beds are very minute, yet they are crowded in great numbers upon long discoloured stripes on the leaves. The spores themselves are yellow and round.

“The popular name suggested is that of ‘Yellow Rust,’ and it is a very expressive one. *Puccinia dispersa*, on the other hand, as its name implies, has its uredospore beds scattered over the surface of the leaves. The spore beds are larger and brown, or yellowish brown in colour. Seen side by side when fresh these two species can be instantly recognised by the naked eye. Professor Eriksson has been kind enough to send me specimens of both species, and during the past autumn I have given some little attention to the matter. Doubtless *P. dispersa* has hitherto been regarded by us in its *uredo* stage as *P. graminis*, while its teleutospores have been confused with those of *P. glumarum*. Nor is this last mistake surprising, for between the teleutospores of *P. glumarum* and those of *P. dispersa* very little morphological difference exists. They are alike in form, in colour, in size, and in the fact that they both germinate in autumn. *P. dispersa*, however, occurs more frequently scattered on the leaves, while *P. glumarum* is in lines upon the sheaths. Unfortunately, however, *P. dispersa* also sometimes occurs on the sheaths, but its spore beds are larger. My attempts this year to get the teleutospores of both species to germinate have been unsuccessful, nor have I been more fortunate in getting *P. dispersa* to produce its æcidiospores on *Anchusa vulgaris*, although small bundles of affected wheat leaves have been for the past two months placed in contact with young plants of *Anchusa* growing in the open air. In Sweden *P. glumarum* appears to be generally the more frequent, but Professor Eriksson tells me that this year *P. dispersa* is more abundant than he has ever

hitherto known it. He considers *P. dispersa* to be commoner in warmer climates, and considers its profusion this year to be due to the greater heat and dryness of the earlier part of the year. He has proved by experimental culture that the æcidiospores of *P. dispersa* occur on *Anchusa vulgaris*, but the life history of *P. glumarum*, as far as this stage is concerned, is at present unknown. The three fungi above referred to—*Puccinia graminis*, *P. glumarum*, and *P. dispersa*—may, as has been suggested, be popularly and appropriately designated the black rust, the yellow rust, and the brown rust.”

Blenheim Apple Sport.—Mr. Wootton, of Byford, Hereford, sent an Apple two-thirds of the surface of which was dark crimson, the remaining part uncoloured, the junction between the colours being sharply defined. The colour was confined to the epidermis alone. It was thought that it might have been crossed with the pollen of some dark-skinned variety; but Mr. Wootton reports that the neighbouring apple trees are a Ribston and a King of the Pippins; but several stocks of bees are very near. A similar apple appeared on the same tree in 1895.

SCIENTIFIC COMMITTEE, DECEMBER 15, 1896.

Dr. M. T. MASTERS, F.R.S., in the Chair, and four members present.

Primula sinensis and Hybrid.—Mr. E. Hyde, of Ealing, exhibited at the meeting held on November 24 three fine plants of an improved form of *P. sinensis*, raised from an originally wild plant. They closely resembled drawings of this species when first introduced about 1820. A botanical certificate was unanimously awarded to Mr. Hyde for them. He also showed a hybrid raised between this species (male) and *P. obconica* (female), in which the form of the umbel, as well as that of the leaf, more resembled those of *P. obconica*. The segments of the petals were flat and not reflexed, and but slightly cusped. These differences, however, were not considered to be sufficiently pronounced to be regarded as well-defined intermediate characters, so that it was apparently a case of prepotency on the part

of the female parent (*P. obconica*). Dr. Masters gave an interesting account of the introduction of the wild plant into England. Dr. Henry first pointed it out to him at Kew among a collection of dried plants, which he had made in the mountains of Central China. Dr. Masters was thus enabled to recognise it growing in the gardens of Appley Towers, Isle of Wight, the seed having been sent over by one of the family. Thence it passed into the hands of Messrs. Sutton, who have tried to cross it, but hitherto it has appeared to resist all attempts. Further particulars will be found recorded in the *Gardeners' Chronicle*, January 26 and November 23, 1889, November 15, 1890, and in Mr. A. W. Sutton's paper on Chinese Primulas, *Journal R.H.S.*, 1891, vol. xiii. p. 99.

Catalpa bignonioides.—Dr. Bonavia exhibited specimens of these curiously-winged seeds, but they did not appear to have been fertilised, as no embryo could be detected in them. The seed vessel, which is rarely seen in this country, is nearly a foot in length.

Canker in Apple Trees.—Dr. Masters exhibited specimens of this common disease, which has hitherto baffled investigations as to its cause, but the examples shown bore numerous red fructifications of the fungus *Nectria ditissima* bursting through the bark.

Pinus Balfoureana var. *aristata*.—He also showed specimens of the cones of this Pine, which is a native of the alpine regions of Colorado. They were received from Mr. A. D. Webster. The shoots bearing the young cones bore short stout leaves, unlike those of a vegetative shoot, on which they were longer and more slender, though Dr. Masters observed that the anatomical peculiarity of having a single resin canal is the same in both. The scales of the ripe cone have the external bracts terminating in an awn-like tip, which doubtless suggested the varietal name.

Tomato Fruits Diseased.—He also brought some fruits badly diseased. It appeared to be an advanced stage of the "yellow spotted" form.

Ilex otherea fruit.—Dr. Masters also showed a fruiting branch of this Japanese species of Holly. It has not been seen before in this country with berries.

Celery Decayed.—Mr. Messenger, of Woolverstone Gardens, Ipswich, forwarded two large plants with the interior leafstalks

much decayed. No fungi had been found in similar instances, and the general belief was that the plants had been earthed up (and perhaps bound up) too early, so that growth was hindered, and wet having penetrated produced the decay.

FRUIT AND VEGETABLE COMMITTEE.

OCTOBER 13, 1896.

PHILIP CROWLEY, Esq., in the Chair, and nineteen members present.

Awards Recommended :—

Gold Medal.

To Mrs. Wingfield, Ampthill (gr. Mr. Empson), for an enormous exhibit of magnificent garden produce.

Silver-gilt Knightian Medal.

To Earl Percy, Syon House (gr. Mr. Wythes), for 100 dishes of Apples and Pears shown in perfect condition.

Cultural Commendation.

To Mr. James Hudson, gardener to the Messrs. de Rothschild, Gunnersbury House, for a basket of superb 'Newton Wonder' Apples, gathered from a tree planted only in 1894.

To Mr. James Hudson, for five excellent dishes of Peas, 'William I.' and 'Sutton's Bountiful,' sown July 20; 'Empress of India,' sown July 10; 'Veitch's Criterion' and 'The Duchess,' sown July 11.

Other Exhibits.

Mr. Wythes brought some bunches of a small variety of Banana, and a Potato—'Syon Maincrop'—raised by crossing 'Sutton's Seedling' and 'Prime Minister.' The Committee requested that sets of the Potato should be sent to Chiswick for trial.

Messrs. Young & Dobinson, Stevenage, sent a basket of Tomato 'Young's Eclipse.'

Mr. J. Basham, Bassaleg, Newport, sent a very interesting exhibit of very highly coloured 'Gravenstein' Apples. It was stated that Mr. Basham had two trees of 'Gravenstein,' one of which produced the ordinary pale-skinned form, occasionally dotted and streaked with a little crimson, and the other always bore exceedingly highly-coloured fruits, like the sample sent. The Committee advised the propagation of the variety if it continued constant.

Mr. W. Shingler, Melton Constable, sent a new black Grape, a sport from 'Muscat Hambro,' called 'Lady Hastings.' The Committee considered it a promising variety, but the bunch exhibited was not quite in condition and appeared to have been cut some time.

A. Waterhouse, Esq., Yattenden Court (gr. Mr. Maher), sent three new Grapes: (1) 'Black Diamond,' a seedling from 'Gros Maroc'; berries of splendid colour, but somewhat lacking in flavour: (2) 'Red Sweetwater,' raised from 'Black Hambro' × 'Alicante'; of a pale red colour, sweet and refreshing: (3) 'Yattenden Court,' from 'Gros Maroc,' resembling but hardly equal to 'Black Hambro.'

W. Roupell, Esq., Roupell Park, S.W., brought a basket of Dessert Tomato, 'Yellow Acorn.' The fruits were exceedingly clean and well-grown, and of a beautiful yellow; the flavour also for the time of year was excellent, but the Committee considered it too near to 'Yellow Plum' and 'Golden Nugget' to warrant an award.

Mr. G. Fulford, Damerham, sent a seedling Melon, 'Countess' × 'Dickson's Exquisite.'

Mr. R. W. Green, Wisbech, sent Potato 'Green's Surprise.' The Committee asked that sets should be sent to Chiswick.

Captain Carstairs, Welford Park, Newbury (gr. Mr. Chas. Ross), brought a handsome Pear, 'The Popham'—apparently (to judge by its appearance) a cross between 'Beurré Diel' and 'Duchesse d'Angoulême,' and possessing the sweetness of the latter and the grittiness of the former. Also an Apple, 'Ross's Pearmain,' a seedling from 'Golden Reinette'—long yellow fruits streaked with red. Also Apple 'Surprise,' a seedling from 'Northern Spy'—a very promising fruit with smooth, clear skin, somewhat like a pale 'Worcester Pearmain,' but of good quality and delicious flavour, sweet and brisk. An Award of Merit was

proposed for it, but, the voting being equal for and against, the Chairman gave his vote against, saying, it would be better to bring it up again next year. Mr. Ross subsequently said that he had raised a great many seedlings from 'Northern Spy,' but that all had come crabs except this one.

Mr. Freer, New Brompton, sent two green and white Vegetable Marrows of Brodingnagian proportions, one weighing $75\frac{1}{2}$ lbs., the other $64\frac{1}{2}$.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. Bain), sent a dwarf Celeriac with variegated leaves.

Mr. Harris, Croydon, sent Melon 'Harris's Favourite.'

Mr. Geo. Lovelock, Normanton, Stamford, sent a reputed seedling Apple, but the Committee considered it to be 'Cellini,' or so near to it that it was practically the same.

R. L. Proudlock, Esq., Curator of the Government Botanic Gardens, Ootacamund, India, sent a jar of Jelly made from fruit of *Rhodomyrtus tomentosa*. The jelly was found exceedingly sweet, and the flavour somewhat like apple jelly with a *soupeçon* of guava flavour, but hardly so good as jelly made from English medlars, which is similar but not so sweet.

Mr. J. C. Tallack, Livermere, Bury St. Edmunds, sent Apple 'Beauty of Livermere'—a seedling of much beauty, but of hardly sufficient flavour and quality for dessert purposes. The colour is so high that in many cases it passes into the flesh of the fruit, which is of medium size, full at the base, and has a deeply depressed eye. Its colour is sure to make it sell well in the market.

Messrs. J. Laing, Forest Hill, sent the Pear referred to above, named 'The Popham,' also Apple 'Kandil Sinap,' a fruit much in the way of 'Pidgeonette,' very juicy but lacking in flavour; also Apple 'Sir Joseph Banks,' a handsome fruit of the Blenheim type, but somewhat dry and mealy.

Messrs. Rivers, Sawbridgeworth, sent an Apple which they proposed to call 'St. Edmund.' It was of remarkably fine flavour, though somewhat dry. It was very highly coloured, but with a sort of hazy bloom over the surface, and, if it will keep, will prove of value. It was requested that it might be shown later under a different name, there being already an apple of very different character named 'St. Edmund's Pippin.'

The following resolution was proposed by Mr. Wythes and

seconded by Mr. Chas. Ross, and carried unanimously amid acclamation: "That a vote of thanks be accorded to Philip Crowley, Esq., Chairman; and to the Rev. W. Wilks, Secretary, as an expression of complete confidence in the absolutely fair and honourable way in which they conduct the work of the Committee."

FRUIT AND VEGETABLE COMMITTEE, OCTOBER 27, 1896.

H. BALDERSON, Esq., in the Chair, and seventeen members present.

Awards Recommended:—

Silver Banksian Medal.

To F. Foljambe, Esq., Osberton, Worksop (gr. Mr. T. H. Crasp), for a group of 24 melons.

Cultural Commendation.

To Mr. T. H. Crasp, for 3 superb bunches of Grape 'Golden Queen' — a variety raised by the late Mr. John Pearson, of Chilwell, Notts, by crossing 'Alicante' with 'Ferdinand de Lesseps,' 'F. de Lesseps' being itself a hybrid of Mr. Pearson's, obtained from crossing 'Royal Muscadine' with the American 'Strawberry' Grape. The berries of 'Golden Queen' are remarkably long and of a full yellow colour, with a beautiful bloom; juicy and of good flavour, but not in this respect equal to 'Mrs. Pearson,' which was raised from exactly the same cross.

Other Exhibits.

Earl Percy, Syon House (gr. Mr. Wythes), sent Melon 'Syon Favourite,' obtained from 'Syon House' × 'Hero of Isleworth.'

F. Foljambe, Esq., Osberton, Worksop (gr. Mr. T. H. Crasp), sent two seedling Melons, 'Gateford Hill' and 'Osberton.' They both appeared to be promising varieties, but the Committee considered it too late in the season to offer a fair opinion upon them. Mr. Crasp also sent a fruiting spray of *Vanilla aromatica*, one of the orchids whose fruit pods supplies the vanilla of commerce.

W. H. Evans, Esq., Ford Abbey, Chard (gr. Mr. J. Crook),

sent a seedling Apple of remarkably fine colour and appearance, which would doubtless sell well as a market fruit, but was considered rather mealy.

W. R. Banks, Esq., Kingston Lacy, Wimborne (gr. Mr. E. Menzies), sent an excellent seedling Apple, but not sufficiently distinct from 'Wellington.'

Mr. C. Stubbington, Brookside, Botley, Hants, sent a seedling Grape, said to be quite as hardy as 'Sweetwater,' twice as vigorous, and an enormous cropper. In appearance it was very like 'Royal Muscadine.' Also a dish of beautiful Apples, said to have been grown from a pip. Whether this were so or not the Committee considered the fruits identical with 'Cox's Orange.'

Mr. George Lee, Clevedon, sent an Apple which he stated he received some years ago from the R. H. S. under the name of 'Amasa,' together with the information that it had been 'brought home by an officer in the army.' It was recognised as the apple now known under the name of 'Colonel Vaughan.'

Mr. A. Dale, Akeson, Harrogate, sent a seedling Apple, 'Clair Pippin,' a very nice fruit, but of hardly sufficient distinctive character of its own.

From the Society's Gardens came 'Self-Blanching' Celery, from seed supplied by Messrs. Barr. It was considered a good dwarf red celery, with thick fleshy stalks, but the specimens shown had not blanched themselves. Also the Variegated Celeriac exhibited by Sir Trevor Lawrence at the last meeting. Also 'Polish Short Stem' Red Cabbage, from seed sent by Messrs. Vilmorin.

The Rev. Gordon Salmon, Overton Vicarage, York, sent three fruits of 'Pitmaston Duchess' Pear, 'crossed on "Doyenné du Comice." ' The three fruits weighed 3 lbs. 10 oz., and were remarkable in that even experts were doubtful (until informed) whether they were 'Pitmaston Duchess' or 'Beurré Diel,' the shape and appearance of the fruit having apparently been altered by the 'Comice' stock. The flavour also was found to be less acid and astringent than 'Pitmaston' usually is.

E. J. Vokes, Esq., Kingsworthy, Winchester, sent some seedling nuts, weighing about $\frac{1}{4}$ oz. each. The seedling tree sprang up in a crevice in a brick wall three feet from the ground, and has this year produced fruit. The nuts were like large Kent cobs, but had a very thin shell, which could be easily broken.

FRUIT AND VEGETABLE COMMITTEE, NOVEMBER 10, 1896.

PHILIP CROWLEY, Esq., in the Chair, and ten members present.

Awards Recommended :—

Silver Knightian Medal.

To C. Bayer, Esq., Tewkesbury Lodge, Forest Hill (gr. Mr. Taylor), for a collection of 12 varieties of Grapes which had all been grown in one house. They were 'Mrs. Pince,' 'Black Hamburg,' 'Mrs. Pearson,' 'Gros Maroc,' 'Gros Colmar,' 'Muscat of Alexandria,' 'Gros Guillaume,' 'Trebbiano,' 'Alicante,' 'Foster's Seedling,' 'Lady Downe's Black,' 'Alnwick Seedling.'

Silver Banksian Medal.

To Messrs. Dobbie & Co., Orpington, Kent, for a collection of Vegetables.

Other Exhibits.

Edmund Lord, Esq., Belmont, Rawtenstall (gr. Mr. J. Wright), sent a Black Grape which was not recognised by any of the Committee. It had extraordinarily long and large oval berries, and made a very handsome bunch; but it was badly coloured, almost half of each berry being whitish green. The flesh was crisp and refreshing, but devoid of flavour. It was considered that, notwithstanding its handsome size, it was not, in the condition shown, a desirable novelty, but it was suggested that if it were grown with more heat it might improve. Eyes were requested to be sent to Chiswick to test this idea.

Messrs. W. & J. Brown, Stamford, sent two seedling Apples—(1) 'Toogood's Seedling,' probably a cross between 'Wellington' and 'Hawthornden,' the former of which it greatly resembled, except in the eye and in having a softer flesh; (2) 'Lavender's Seedling,' which somewhat resembled 'Wyken Pippin' in appearance. It was said to keep well till March or April, and if this prove to be the case the Committee thought it might be valuable. They desired to see it again in March.

FRUIT AND VEGETABLE COMMITTEE, NOVEMBER 24, 1896.

PHILIP CROWLEY, Esq., in the Chair, and nineteen members present.

Awards Recommended:—

Silver-gilt Knightian Medal.

To Her Majesty the Queen, Windsor (gr. Mr. Owen Thomas), for a group of 12 splendid Pines.

Silver Banksian Medal.

To Messrs. Peed & Sons, Norwood, for a collection of Fruit.

To Chas. E. Shea, Esq., Foots Cray, for 12 dishes of beautiful Apples, 2 of Pears, and one of very fine Medlars.

Bronze Banksian Medal.

To Lieut.-Col. Vernon, Uxbridge (gr. Mr. Batchelor), for a small collection of Fruit, the effect of which was spoilt by being staged on patches of shavings coloured with the crudest dyes.

Award of Merit.

To Apple 'Clapham Beauty' (votes, unanimous), from Mr. H. J. Sheppard, Bedford. Fruit of medium size, flat, greenish yellow, brightly streaked with crimson on the cheek; eye large, set in a very shallow basin; stalk thin, set in a depression; flesh white, very melting, sweet, and juicy. A very distinct and, for the time of year, very good dessert apple.

To Apple 'Livermere Favourite,' as a market variety (votes, 7 for, 5 against), from Mr. J. C. Tallack, Bury St. Edmunds. A medium-sized, very brilliantly coloured fruit, said to be a wonderful bearer, and would no doubt, sell well in the market, on account of its appearance, but as a garden fruit, where flavour and quality stand for more than appearance, it could hardly be recommended.

To Apple 'St. Martin's' (votes, unanimous), from Messrs. Rivers & Son, Sawbridgeworth. Fruit medium size, conical; skin inclined to russet, but flaked all over with crimson; small eye, set in a rather deep basin; stalk short, set in a wide but deep depression; flesh yellowish and of rich flavour. This will probably prove an acquisition amongst late-keeping dessert Apples. (Fig. 20.)

Cultural Commendation.

To Mr. Owen Thomas (gr. to Her Majesty the Queen), Windsor, for a very fine box of Cucumbers, 'Frogmore Prolific.'

Other Exhibits.

Messrs. Rivers sent a new Apple, called 'Brook's Hill Pippin,' a very tall conical fruit, having a very pretty eye, which with its depression occupies the whole of the summit of the cone; skin a full yellow with a few streaks of red; stalk very short in a deep depression.

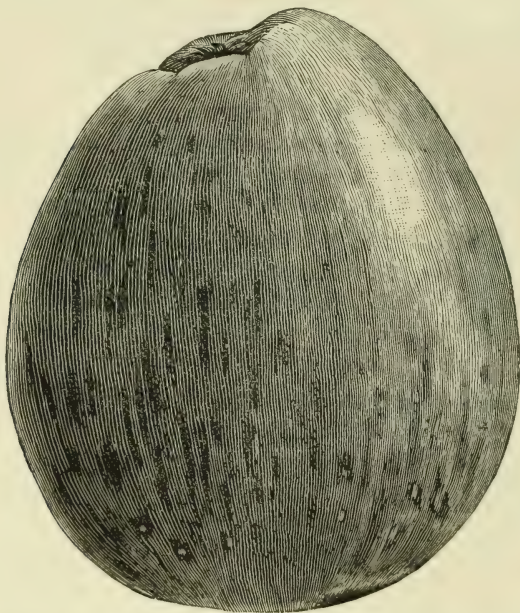


Fig. 20.—APPLE 'ST. MARTIN'S.' (*Journal of Horticulture.*)

From Earl Percy, Syon House (gr. Mr. Wythes), came a dish of Artichokes, 'Vilmorin's White.' The tubers were exceptionally long, as well as white, some of them exceeding 6 inches.

Mr. Owen Thomas sent from Her Majesty's Gardens at Windsor a dish of superb yellow Tomatos, 'Royal Windsor.' It was requested that seed might be sent to Chiswick.

Messrs. B. Hurst & Son, Burbage, Hinckley, sent a fruit of Apple 'Bismarck,' probably the largest ever seen, exceeding 18 oz. in weight and 15 inches in circumference, and very highly coloured.

FRUIT AND VEGETABLE COMMITTEE, DECEMBER 15, 1896.

PHILIP CROWLEY, Esq., in the Chair, and twenty-one members present.

Awards Recommended:—

Silver Knightian Medal.

To Messrs. Rivers & Son, Sawbridgeworth, for 60 dishes of Apples and Pears.

Silver Banksian Medal.

To Lord Wantage, V.C., Lockinge Park, Wantage (gr. Mr. Fife), for 56 dishes of Apples, 4 dishes of Pears, 1 dish of Grapes, and 1 of Tomatos.

[The Council, on the report of the Chairman, awarded a Silver Knightian Medal for this Collection of Fruit].

To Messrs. Laing & Sons, Forest Hill, for 56 dishes of Apples.

Cultural Commendation.

To Mr. James Smith, gardener to the Earl of Rosebery, Mentmore, for an exhibit of Grapes, 'Lady Hutt,' 'Appley Towers,' and 'Black Morocco.' They had been grown in the same house as some 'Gros Maroc' and 'Mrs. Pince,' but whereas these two were long past their best and quite shrivelled, the three varieties shown were in excellent condition—sound, plump, and fresh. 'Lady Hutt' is a round white grape, not very unlike the 'Duke of Buccleugh' in appearance; sweet and pleasant to the taste, and very juicy for the time of year. 'Black Morocco' has large, long, oval berries, coloured at the apex, but fading away to green at the stalk; flesh firm and somewhat crisp, but with a slightly pleasant, refreshing flavour. 'Appley Towers' is a black grape of very great promise, probably the finest flavoured late grape we have. The berries are of no

great size, black, oval, juicy, refreshing, and of splendid flavour, with a tinge of Muscat in them.

To Mr. W. Farr, gardener to A. Pears, Esq., Spring Grove, Isleworth, for a large basket of Tomatos, 'All the Year Round,' magnificently grown.

Other Exhibits.

Lord Suffield, Gunton Park (gr. Mr. Allan), sent 3 fruits of a new Pear, 'President Barabe,' which would undoubtedly have obtained an Award of Merit had the regulation 6 fruits been shown. Two of the fruits were below and one above medium size. It was like a late Bergamotte, both in appearance and quality and flavour. Eye very large and open on a flat surface; no depression roundish; skin yellow, covered all over with russet. Stalk short and stout, in a very slight depression. Like most Bergamottes it was a trifle gritty, but melting and juicy; nevertheless with a very fine flavour. A very promising new fruit.

Mrs. Wingfield, Ampthill (gr. Mr. Empson), sent a grape under name 'Mrs. Wingfield,' which the Committee considered to be identical with the 'Black Morocco,' mentioned above. Mr. Empson also had an Apple, 'Beauty of Ampthill,' brilliantly coloured and of fine appearance, but somewhat lacking in flavour; also some very large red Capsicums, 'Codina's Mammoth.'

Captain Carstairs, Welford Park, Newbury (gr. Mr. Chas. Ross), sent 5 seedling Apples—(1) 'Freedom,' a seedling from 'Welford Park Nonsuch' and not very unlike 'Lady Henniker.' (2) 'Mrs. Phillimore,' said to have been raised from 'Lord Burghley,' but might have been taken for a cross between 'Cox's Pomona' and 'Gravenstein;' a large angular fruit with five prominent ridges; tender, sweet, and of good quality, but lacking in flavour. The Committee asked to see it earlier in the season next year. (3) 'Elsie,' a seedling from 'Peasgood Nonsuch,' but very like a reversion to the old 'Pearmain.' (4) 'Ross's Pearmain,' from 'Golden Reinette;' and (5) 'Opal,' of unknown origin. They were all of appropriate size for dessert fruits, and mostly of good appearance, but wanting in flavour.

Mr. T. W. Thornton, Beckenham, and Messrs Silber & Fleming, 57 Wood Street, London, the makers, both sent

specimens of paper plates recommended for the exhibition of Apples and Pears. They are very inexpensive (4s. 6d. a 100), light and indestructible.

Her Majesty the Queen, Windsor (gr. Mr. Owen Thomas), sent some Tomatos, 'Frogmore selected.'

E. W. Till, Esq., Eynsford, Kent, sent an Apple recommended for Cider, 'Winter Quoining.' The tree had been planted in 1839 in a Cottagers' Allotment garden, and is still thoroughly healthy, with a trunk 4 feet in circumference, and yields an average crop of 13 bushels a year.

SPECIAL PRIZES FOR DESSERT APPLES AND PEARS.

For Amateurs and Gentlemen's Gardeners only.

THE VEITCH PRIZES FOR FLAVOUR.

With a view to the formation of a definite list of the best-flavoured varieties of British-grown apples and pears for dessert at all seasons, Messrs. J. Veitch & Sons, of Chelsea, in the summer of 1896 placed a sum of £60 at the disposal of the Council, who, in conjunction with the donors, drew up and sanctioned the following scheme, commencing with the Society's first meeting, in July 1896, and continuing till the last meeting, in June 1898, the Temple Shows only being excepted:—

SPECIAL RULES AND CONDITIONS.

1. No exhibitor may enter more than three distinct varieties in each or either class at each meeting.

2. Six fruits (neither more nor less) of each variety must be shown, the judges being at liberty to cut any three of them they please.

3. Every exhibitor must guarantee that the fruit he exhibits in these classes has been grown *entirely* out of doors. He should also state on the name card "Wall tree," "Bush," or "Standard," together with the aspect—north, east, south, or west—the nature of the soil; the county; and, when known certainly, the stock on which the tree is grafted.

4. The judges are requested to allot twelve points to a perfect dish of fruit—perfect in flavour, in quality, in appearance, and in size—distributing the points in the following proportions:—

For flavour	6 points.
For quality	3 "
For appearance	2 "
For size	1 "

By "quality" is intended the meltingness and smoothness (absence of grittiness) of the flesh, or (as, for example, in the case of early Apples) its crispness and juiciness.

By "appearance" is intended colour and beauty of outline and shape.

By "size" is intended such as invests the fruit "with the greatest value for table use." "Enormous specimens should not be preferred, as, beyond a certain point, size becomes a defect in dessert fruits." *Vide* R.H.S. Rules for Judging, &c., 1896 Code.

5. When several exhibits of the same variety are shown by several exhibitors, and the flavour and quality of two or more of them are found to be equal, the judges are directed in such case to award the prizes according to the demands of "appearance" and suitable "size."

6. The first and second prizes are not to be awarded to the same variety at the same meeting.

7. An exhibitor having won the first prize may not compete again during the year *with the same variety*, but the same variety exhibited by different exhibitors may take the first prize at any or all the meetings, and similarly with the second prize; nor may an exhibitor who has won a second prize take another second prize with the same variety; but an exhibitor having taken a second prize may take a first prize with the same variety at any subsequent meeting.

8. The prizes will be withheld if the fruits shown are considered wanting in sufficient flavour for dessert, or not fair specimens fit for table.

9. In all other respects the general rules will apply.

The following is a table showing the results obtained up to January 1, 1897, giving all the varieties shown for these prizes, but only mentioning the names of the winning exhibitors:—

Date	Apples	Winner	Pears	Winner
1896				
July 14	—	—	Citron des Carmes, 2nd Prize only	O. Thomas
July 28	—	—	Little William . .	No Prize
Aug. 11	Irish Peach, 1st . .	O. Thomas . .	Jargonelle, 1st . .	W. King
	Red Astrachan, 2nd .	C. Browne . .	—	—
	Worcester Pearmain .	—	—	—
	Summer Queen . .	—	—	—
	Duchess of Oldenburg	—	—	—
	Cassell's Rosemana .	—	—	—
Aug. 25	Worcester Pearmain, 1st	C. Browne . .	Beurré de l'Assomption, 1st	G. Norman
	Duchess's Favourite, 2nd	G. Wythes . .	Williams's Bon Chrétien, 2nd . .	G. Wythes
	Devonshire Quarrenden	—	Doyenné Boussoch . .	—
	Lady Sudeley . .	—	Beurré d'Amanlis . .	—
	Irish Peach . .	—	Peach Pear . .	—
	Yellow Ingestrie . .	—	—	—
	Red Astrachan . .	—	—	—
	Kerry Pippin . .	—	—	—

Date	Apples	Winner	Pears	Winner
1896				
Sept. 8	Benoni, 1st . . .	J. Powell . . .	Souvenir du Congrès, 1st	C. Herrin
	Worcester Pearmain, 2nd	C. Herrin . . .	Beurré d'Amanlis, 2nd	F. Harris
	Gravenstein . . .	—	Williams's Bon Chrétien	—
	Kerry Pippin . . .	—	Louise Bonne . . .	—
	Ribston . . .	—	—	—
Oct. 1	Cox's Orange, 1st . . .	H. C. Prinsep	Thompson's, 1st . . .	W. Cotterell
	Ribston, 2nd . . .	T. W. Startup	Beurré Hardy, 2nd . . .	W. Cotterell
	Worcester Pearmain . . .	—	Louise Bonne . . .	—
	Margil . . .	—	Virgonia (Virgouleuse)	—
	Sir J. Banks . . .	—	Welbeck Bergamotte . . .	—
	King of the Pippins . . .	—	Brockworth Park . . .	—
	Scarlet Golden Pippin . . .	—	Marie Louise . . .	—
	Duchess's Favourite . . .	—	Fondante d'Automne	—
	Gravenstein . . .	—	Gansel's Bergamotte . . .	—
	—	—	The Popham . . .	—
	—	—	Fondante de Thirriot	—
Oct. 13	Cox's Orange, 1st . . .	G. Wythes . . .	Doyenné du Comice, 1st	C. Herrin
	Ribston, 2nd . . .	C. Herrin . . .	Thompson's 2nd . . .	J. Powell
	American Mother . . .	—	Beurré Superfin . . .	—
	—	—	Marie Louise . . .	—
	—	—	Duchesse d'Angoulême	—
	—	—	Seckle . . .	—
	—	—	Fondante d'Automne	—
Oct. 27	Cox's Orange, 1st . . .	G. Woodward	Doyenné du Comice, 1st	G. Woodward
	—	—	Beurré Superfin, 2nd . . .	G. Woodward
	Ribston, 2nd . . .	C. Herrin . . .	—	—
	American Mother . . .	—	Beurré Diel . . .	—
	—	—	Conseiller de la Cour . . .	—
Nov. 10	Cox's Orange, 1st . . .	J. W. Herbert	Beurré d'Anjou, 1st . . .	C. Herrin
	Ribston, 2nd . . .	G. Woodward	Knight's Monarch, 2nd	R. Maher
	Cornish Aromatic . . .	—	Beurré Diel . . .	—
	Fearn's Pippin . . .	—	Soldat Laboureur . . .	—
	King of the Pippins . . .	—	Marie Louise . . .	—
	—	—	Brown Beurré . . .	—
	—	—	Glou Morceau . . .	—
Nov. 24	Cox's Orange, 1st . . .	C. Herrin . . .	Beurré du Buisson, 1st	W. H. Divers
	De Neige, 2nd . . .	W. H. Divers . . .	Knight's Monarch, 2nd	O. Thomas
	Ribston . . .	—	Beurré d'Anjou . . .	—
	Margil . . .	—	Glou Morceau . . .	—
	Blenheim Orange . . .	—	Epine Dumas . . .	—
	Lemon Pippin . . .	—	Joséphine de Malines	—
	King of the Pippins . . .	—	Winter Nelis . . .	—
	Livermere Favourite . . .	—	—	—
	Melon Apple . . .	—	—	—
Dec. 15	Cox's Orange, 1st . . .	W. King . . .	Winter Nelis, 1st . . .	J. Powell
	Blenheim Orange, 2nd	J. Powell . . .	Glou Morceau, 2nd . . .	W. Cotterell
	Reinette du Canada . . .	—	Joséphine de Malines	—
	Claygate Pearmain . . .	—	Prince Consort . . .	—
	Lady Henniker . . .	—	Doyenné d'Alençon . . .	—
	McLean's Favourite . . .	—	Bergamotte d'Espéren	—
	Mannington Pearmain	—	Nouvelle Fulvie . . .	—
	Ribston . . .	—	—	—

FLORAL COMMITTEE.

OCTOBER 13, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-eight members present.

Awards Recommended :—

Silver-gilt Banksian Medal.

To the Hon. H. H. Aldenham, Aldenham House, Elstree (gr. Mr. Beckett), for a very fine display of Perennial Asters (Michaelmas Daisies).

Silver Flora Medal.

To Messrs. J. Cheal & Sons, Crawley, for a collection of Dahlias.

Silver Banksian Medal.

To Mr. H. B. May, Upper Edmonton, for a group of *Adiantum Farleyense*.

To Mr. G. Prince, Oxford, for a collection of Tea Roses.

Bronze Flora Medal.

To Messrs. de Rothschild, Gunnersbury House, Acton (gr. Mr. Hudson), for a group of Perennial Asters (Michaelmas Daisies), which had been grown from cuttings inserted in a cold frame in May.

To Messrs. Barr & Son, Covent Garden, for a group of hardy flowers.

Bronze Banksian Medal.

To Mr. W. Wells, Redhill, for a group of Chrysanthemums.

To Mr. T. S. Ware, Tottenham, for a group of Chrysanthemums, Asters, and Nerines.

First-class Certificate.

To *Pteris Childsii* (votes, unanimous), from Mr. T. Childs, New Eltham. A very handsome fern of bushy habit with pale green fronds, the pinnæ broad, much divided and beautifully crested.

To *Aglaonema Curtisii* (votes, 6 for, 2 against), from Messrs. J. Veitch & Sons, Chelsea. A beautiful new aroid from Malaya. The leaves are broad, stiff, deep green with blotches and veinings of a glaucous hue.

Award of Merit.

To *Salvia splendens grandiflora* (votes, unanimous), from Sir Trevor Lawrence, Bart., Dorking (gr. Mr. W. Bain). Plant of good habit and very floriferous. Flowers borne on long spikes, colour bright scarlet.

To *Lobelia Gerardi* (votes, 10 for, 7 against), from Sir Trevor Lawrence, Bart. (gr. Mr. W. Bain). The deep blue flowers are borne on stout spikes.

To *Begonia metallica Regina* (votes, 7 for, 1 against), from Baroness Burdett-Coutts, Holly Lodge, Highgate (gr. Mr. J. Willard). A distinct variety, the leaves being blotched and marbled with creamy white and pink.

To Cactus Dahlia 'Ophelia' (votes, 20 for), from Mr. C. Turner, Slough. A bright scarlet variety with sharply-pointed petals.

To Pompon Dahlia 'Geraldine' (votes, 12 for), from Mr. C. Turner. Flowers yellow, heavily tipped with orange red.

To Pompon Dahlia 'Clarissa' (votes, 17 for), from Mr. C. Turner. A very fine sulphur yellow variety.

To Cactus Dahlia 'Mrs. Kingsley Foster' (votes, unanimous), from Messrs. J. Cheal & Sons. Flowers golden yellow, suffused with orange red towards the centre.

To Single Dahlia 'Miss Kathleen Goschen' (votes, 10 for, 1 against), from Messrs. J. Cheal & Sons. Flowers of good form, centre of petal white margined with rosy purple.

To Single Dahlia 'Miss Hudson' (votes, 11 for), from Messrs. J. Cheal & Sons. Flowers of medium size, pink striped with white.

To *Asplenium Herbstii* (votes, unanimous), from Mr. H. B. May. A very handsome dwarf variety, with dark green fronds.

To Nerine 'Novelty' (votes, 12 for, 5 against), from Mr. T. S. Ware. Flowers large, bright rose, borne in dense clusters on long spikes.

To Japanese Chrysanthemum 'Madame Gustave Henry' (votes, unanimous), from Mr. W. Wells. A very handsome variety with large creamy-white flowers.

Other Exhibits.

Mr. J. Mansell, Somerset Place, Guernsey, sent six varieties of Nerines.

Messrs. F. Sander & Co., St. Albans, sent a Coleus named 'Captain Holford.'

From Messrs. R. Veitch & Co., Exeter, came Polygonum amplexicaule oxyphyllum and Fuchsia triphylla hybrida. The Committee asked to see a plant of the latter.

Messrs. H. Cannell & Sons, Swanley, sent Chrysanthemums.

From Messrs. Vilmorin, Paris, came a beautiful collection of seedling Begonias.

Messrs. Young & Dobinson, Stevenage, sent a small group of Dahlias, Chrysanthemums, and Asters.

Mr. H. F. Rosoman, Sholing, sent a seedling Chrysanthemum named 'Beauty of Sholing.' The Committee asked to see it again.

Mr. E. H. Jenkins, Hampton Hill, exhibited a Chrysanthemum named 'Golden Sheaf.'

From Mr. R. Owen, Maidenhead, came two new Chrysanthemums.

FLORAL COMMITTEE, OCTOBER, 27, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-three members present.

Awards Recommended:—

Silver-gilt Banksian Medal.

To Earl Percy, Syon House, Brentford (gr. Mr. Wythes), for a group of well-grown Codæums (Crotons) in great variety.

Silver Flora Medal.

To A. Pears, Esq., Green Bank, Isleworth (gr. Mr. Farr), for a collection of Chrysanthemums.

To Messrs. J. Laing & Sons, Forest Hill, for a group of Ericas, Cyclamen, Orchids, Dracænas, Palms, &c.

To Mr. A. Waterer, Woking, for a group of Picea pungens glauca, and Pernettyas.

Silver Banksian Medal.

To Her Majesty the Queen, Windsor (gr. Mr. Thomas), for a group of winter-flowering Zonal Pelargoniums.

To H. J. Elwes, Esq., Colesborne, Andoversford, Gloucester (gr. Mr. Lane), for a group of seedling Nerines, comprising several unnamed varieties of much promise.

To Mr. Wells, Earlswood, Redhill, for a group of Chrysanthemums.

Bronze Banksian Medal.

To Messrs. J. Peed & Sons, West Norwood, for a group of Crotons, Dracænas, Orchids, and Saintpaulia ionantha.

First-class Certificate.

To Sarracenia Sanderæ (S. Drummondii alba × S. Cookiana) (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A distinct and handsome variety with large pale green pitchers with purple veinings.

Award of Merit.

To Nerine flexuosa major (votes, 11 for, 1 against), from Sir Trevor Lawrence, Bart., Dorking (gr. Mr. Bain). A very free-flowering variety of dwarf habit. Flowers bright pink striped with lilac, borne on stout scapes.

To Japanese Chrysanthemum 'Elsie Teichmann' (votes, 14 for), from C. E. Shea, Esq. The Elms, Foots Cray, Kent. A magnificent variety with large flowers of great substance; the long incurving florets are white suffused with cream.

To Incurved Chrysanthemum 'Mr. James Murray' (votes, 12 for), from Mr. R. Owen, Maidenhead. A fine variety with large rosy lilac flowers of good form.

To Japanese Chrysanthemum 'Australian Gold' (Calvat's) (votes, 15 for), from Mr. W. Wells and Mr. W. J. Godfrey, Exmouth. A handsome variety with large canary yellow flowers.

To Japanese Chrysanthemum 'Pride of Exmouth' (votes, 11 for), from Mr. Godfrey and Messrs. H. Cannell & Sons, Swanley. Flowers very large, white shaded with rosy lilac.

To Japanese Chrysanthemum 'Mrs. J. M. Lewis' (votes, unanimous), from Messrs. H. Cannell & Sons and Mr. Wells. A fine variety with large cream-coloured flowers.

To Japanese Chrysanthemum 'Mrs. Oporto Tait' (votes, 11 for, 6 against), from Messrs. H. Cannell & Sons. Deep golden yellow flowers of good form.

Other Exhibits.

J. H. Arkwright, Esq., Hampton Court, Leominster, sent a very fine Primrose named 'Evelyn Arkwright.' The Committee asked to see this again.

Chrysanthemums were exhibited by—

(1) Dowager Lady Freake, Fulwell Park, Twickenham (gr. Mr. Rickwood).

(2) Mr. Jenkins, Hampton Hill.

(3) Mr. Rosoman, Sholing.

FLORAL COMMITTEE, NOVEMBER 10, 1896.

W. MARSHALL, Esq., in the Chair, and eighteen members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Mr. H. J. Jones, Lewisham, for a collection of Chrysanthemums, Crotons, Dracænas, and Ferns.

Silver Flora Medal.

To Messrs. de Rothschild, Gunnersbury Park, Acton (gr. Mr. G. Reynolds), for a group of *Lycoris aurea*.

To C. E. Shea, Esq., The Elms, Foots Cray, Kent, for a collection of Chrysanthemums.

To Earl Percy, Syon House, Brentford (gr. Mr. Wythes), for a group of Chrysanthemums, with Ferns and small Palms.

To Mr. W. J. Godfrey, Exmouth, for a group of Chrysanthemums and Carnations.

Silver Banksian Medal.

To Mr. T. S. Ware, Tottenham, for a group of Chrysanthemums.

Bronze Banksian Medal.

To Messrs. Young & Dobinson, Stevenage, for a group of Chrysanthemums, Gloxinias, Palms, and Ferns.

Award of Merit.

To Chrysanthemum 'Madame Paul Lacroix' (votes, unanimous), from Mr. P. O. Knowles, Friar Park, Henley-on-Thames. A large-flowered variety, with broad petals, sulphur yellow suffused with creamy white.

To Chrysanthemum 'Mr. H. H. Gardiner' (Japanese Anemone) (votes, 10 for), from H. H. Gardiner, Esq., Nettlebed, Henley-on-Thames (gr. Mr. Ely). A distinct and handsome variety, with large rosy-purple ray florets. Disc large, colour purple and yellow.

To Chrysanthemum 'Ma Perfection' (Incurved Japanese) (votes, unanimous), from Mr. H. J. Jones, Lewisham. A very handsome variety, with large pure white flowers.

To Chrysanthemum 'Mrs. C. Orchard' (votes, 7 for), from Mr. H. J. Jones. A magnificent variety, with large sulphur yellow flowers.

To Chrysanthemum 'Duke of Wellington' (Japanese) (votes, 8 for, 1 against), from Mr. R. Owen, Maidenhead. Flowers large, bronzy yellow.

To Chrysanthemum 'Mignonnette' (Decorative) (votes, unanimous), from Mr. R. Owen. A very free-flowering variety, of good habit of growth. The small, globular, canary-yellow flowers are composed of slender thread-like florets.

Botanical Certificate.

To *Amorphophallus variabilis* (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. (Fig. 21.)

Other Exhibits.

Miss A. S. Ridge, Englefield Green, Staines, sent some Chrysanthemums.

From C. F. Thompson, Esq., Llandaff, Cardiff (gr. Mr. T. Manns), came two varieties of Chrysanthemums.

Mr. J. W. Rawlins, Blyth Hall Gardens, Rotherham, submitted a stand for supporting and draining a flower pot.



Fig. 21.—*AMORPHOPHALLUS VARIABILIS*. (*Journal of Horticulture*.)

FLORAL COMMITTEE, NOVEMBER 24, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—*Silver-gilt Flora Medal.*

To Mr. R. Gülzow, Bexley Heath, for fifty varieties of beautifully coloured *Dracænas*.

Silver Banksian Medal.

To C. E. Shea, Esq., The Elms, Foots Cray, Kent, for *Chrysanthemums*.

To W. F. Darnell, Esq., Devonshire House, Stamford, for a group of *Crotons*, *Palms*, *Aralias*, *Ferns*, and *Chrysanthemums*.

To W. Bryant, Esq., Stoke Park, Slough (gr. Mr. D. Kemp), for a very fine group of single-flowered *Primulas*.

To the Dowager Lady Freake, Fulwell Park, Twickenham (gr. Mr. A. Rockwood), for a collection of *Chrysanthemums*.

To Messrs. Hugh Low & Co., Clapton, for a group of *Cyclamen* and *Carnations*.

To Mr. R. Owen, Maidenhead, for a collection of *Chrysanthemums*.

Bronze Banksian Medal.

To Messrs. Young & Dobinson, Stevenage, for a group of *Chrysanthemums*, *Gloxinias*, and *Coleus*.

To Mr. W. Wells, Earlswood, Redhill, for a collection of *Chrysanthemums*.

First-class Certificate.

To *Dracæna Broomfieldii* (votes, unanimous), from Messrs. F. Sander & Co., St. Albans. A distinct and handsome variety. Leaves eighteen inches long, narrow, bright green, striped and margined with white.

Award of Merit.

To *Chrysanthemum* 'Mrs. Joseph Thompson' (votes, unanimous), from Sir Trevor Lawrence, Bart., Dorking (gr. Mr. W. Bain). A magnificent variety with large pure white flowers.

To *Sonerila* 'Leopold II.' (votes, unanimous), from Sir Trevor Lawrence (gr. Mr. W. Bain). A pretty variety with small deep

green leaves studded with silvery grey spots. Rosy-lilac flowers, borne in great profusion.

To Chrysanthemum 'C. A. Owen' (Japanese) (votes, unanimous), from Mr. R. Owen, Maidenhead. Flowers large, deep golden yellow suffused with bronze.

To Chrysanthemum 'Miss Louise D. Black' (incurved) (votes, 9 for, 8 against), from Mr. W. Wells, Redhill, and Mr. W. J. Godfrey, Exmouth. Flowers of medium size, deep orange suffused with brown on the outer petals.

To Rhododendron 'Cloth of Gold' (R. Lord Wolseley \times R. Teysmanni) (votes, unanimous), from Messrs. J. Veitch & Sons, Chelsea. A very handsome variety. Canary-yellow flowers, borne in large clusters.

To Begonia 'Ensign' (B. Tuberous variety \times B. socotrana) (votes, 11 for, 4 against), from Messrs. J. Veitch & Sons. A beautiful winter-flowering Begonia. Rich rosy-red flowers, semi-double, freely produced, and of good form.

To Chrysanthemum 'Gem of Earlswood' (Pompon Anemone) (votes, unanimous), from Mr. Wells. Flowers of medium size, guard petals rosy pink, cushion golden yellow.

To Chrysanthemum 'Golden Elsie' (votes, unanimous), from Mr. B. Ladhams, Southampton. A sport from Elsie. A very beautiful, bright yellow, free-flowering variety.

Cultural Commendation.

To Messrs. F. Sander & Co., St. Albans, for a very fine specimen of *Cephalotus follicularis*.

Other Exhibits.

Edmund Hyde, Esq., Castle Bar, Ealing (gr. Mr. Holloway), exhibited *Primula sinensis* (wild type). Also a supposed cross, named P. 'Edmund Hyde,' obtained between P. *sinensis* and P. *obconica*. The Committee asked to see this again.

From F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, came *Buddleia madagascariensis*.

Messrs. Fisher, Son & Sibray, Sheffield, sent *Rhododendron* 'Countess of Derby.'

Chrysanthemums were exhibited by—

(1) Lieut.-Col. Vernon, Harefield Park, Uxbridge (gr. Mr. Batchelor).

(2) Mr. J. Selden, Eversley Park Gardens, Winchmore Hill.

- (3) Mr. T. Todman, Dafforne Road, Upper Tooting.
- (4) Mr. H. Becker, Beresford Street, Jersey.
- (5) Messrs. H. Cannell & Sons, Swanley.
- (6) Mr. T. S. Ware, Tottenham.

FLORAL COMMITTEE, DECEMBER 15, 1896.

W. MARSHALL, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—*Silver-gilt Banksian Medal.*

To Messrs. H. Cannell & Sons, Swanley, for a group of Primulas and Zonal Pelargoniums.

Silver Flora Medal.

To Sir Trevor Lawrence, Bart., Dorking (gr. Mr. Bain), for a collection of Anthuriums.

To A. Pears, Esq., Spring Grove House, Isleworth (gr. Mr. Farr), for a group of Poinsettia pulcherrima.

To Messrs. W. Paul & Sons, Waltham Cross, for a group of Roses.

Silver Banksian Medal.

To Mrs. Wingfield, Ampthill House, Ampthill (gr. Mr. Empson), for a group of table plants.

To Messrs. Hugh Low & Co., Clapton, for a group of Cyclamen.

To Messrs. W. Cutbush & Son, Highgate, for a group of Skimmias and Orange trees in pots.

Bronze Banksian Medal.

To Mr. Wells, Earlswood, Redhill, for a group of Chrysanthemums.

To Messrs. J. Peed & Sons, West Norwood, for a group of foliage and flowering plants.

To Messrs. Young & Dobinson, Stevenage, for a group of Chrysanthemums.

Award of Merit.

To Rhododendron nobilium (R. Teysmanni × R. Javanicum)

(votes, 13 for), from Messrs. J. Veitch & Sons, Chelsea. A magnificent variety, with large deep golden yellow flowers produced in dense trusses.

To Rhododendron 'Little Beauty (R. Monarch \times R. malayanum) (votes, 8 for, 1 against), from Messrs. J. Veitch & Sons. A distinct variety, with small bright red flowers.

To Tree Carnation 'Julian' (votes, 11 for), from Mr. J. Douglas, Great Bookham. Flowers large and massive, colour deep crimson.

To Japanese Chrysanthemum 'Christmas Gold' (as a market variety) (votes, 10 for), from Mr. P. Ladds, Swanley. A free-flowering variety of good habit. Flowers bright golden yellow.

To Carnation 'W. Robinson' (votes, 12 for), from Messrs. Carne & Clarke, March. A grand variety, with bright scarlet flowers.

Other Exhibits.

Mr. F. Kitley, Lyncombe Vale, Bath, sent *Pteris tremula petroselina*.

From Mr. G. Ringham, Wrotham Park, Barnet, came a new *Abutilon* named 'Countess of Stafford.'

Messrs. Crane & Clarke, March, sent Carnations 'Deutsche Braut' and 'Madame D. Albertina.' The Committee asked to see these last again.

Mr. T. S. Ware, Tottenham, sent *Narcissus* and Christmas Roses.

Mr. E. H. Jenkins, Hampton Hill, sent Carnation 'Winter Bride.'

Messrs. J. Sander & Co., St. Albans, sent *Begonia* 'Winter Favourite.'

Chrysanthemums were exhibited by—

- (1) C. W. Bond, Esq., Boxhurst, Dorking.
- (2) C. F. Thompson, Esq., Llandaff, Cardiff.
- (3) Mr. R. Owen, Maidenhead.
- (4) Mr. W. J. Godfrey, Exmouth.

ORCHID COMMITTEE.

OCTOBER 13, 1896.

HARRY J. VEITCH, Esq., in the Chair, and fifteen members present.

Awards Recommended:—

Gold Medal.

To J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), for a splendid specimen of *Vanda Sanderiana*, with eight growths, bearing together eleven spikes, numbering in the aggregate 127 flowers.

Silver Flora Medal.

To Messrs. Jas. Veitch & Sons, Chelsea, for a very fine group of rare Orchids in flower.

Silver Banksian Medal.

To Thos. Statter, Esq., Stand Hall, Whitefield, Manchester, (gr. Mr. Johnson), for the white *Cattleya Warscewiczii* 'Countess of Derby,' which had previously received a First-class Certificate.

To C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), for a group of hybrid Orchids, raised in his gardens.

To Messrs. B. S. Williams & Son, Holloway, for a group of Orchids.

To Messrs. F. Sander & Co., St. Albans, for a selection of Orchids in flower.

To Messrs. Hugh Low & Co., Clapton, for a group of Orchids.

First-class Certificate.

To *Cattleya labiata*, var. 'Mrs. E. Ashworth' (votes, 7 for, 5 against), from Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. Holbrook). Sepals and petals pure white; lip purple with a broad white margin.

To *Cattleya Dowiana*, Wheatley's variety (votes, unanimous), from F. Wheatley, Esq., Ringmore, Teignmouth. A fine variety, with white sepals and petals, in which a very faint trace of yellow appeared.

To *Cattleya* × ‘Apollo’ (*C. Mossiæ* ♀ × *C. Aclandiæ* ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons, Chelsea. This fine hybrid had flowers nearly as large as those of *C. Mossiæ*, and intermediate in shape between that species and *C. Aclandiæ*. The sepals and petals were pinkish buff, lightly veined with purple, and bearing a few irregular purple blotches. The broad scoop-shaped lip was rose purple in front, the side lobes being white with dark rose edge. The centre was streaked and tinged with yellow.

To *Cattleya* × ‘Triumph’ (*C. Luddemanniana* ♀ × *C. Lawrenceana* ♂) (votes, unanimous), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond). A pretty hybrid, with flowers of a light rose colour.

Award of Merit.

To *Cattleya* × ‘Eclipse’ (*C. maxima* ♀ × *C. Skinnerii* ♂) (votes, unanimous), from C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond). The flowers resembled a small *C. maxima*, but the lip partook of *C. Skinnerii* in form.

To *Cattleya* × ‘Jupiter’ (*C. Lawrenceana* ♀ × *C. Warscewiczii* var. ♂) (votes, unanimous), from C. L. N. Ingram, Esq. The flower much resembled a light variety of *C. labiata* *Ludemanniana*.

To *Cypripedium Charlesworthii*, Low’s var. (votes, unanimous), from Messrs. Hugh Low & Co., Clapton. A form with dorsal sepal over 3½ inches broad.

To *Compactia speciosa* (votes, unanimous), from A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummins). The plant bore three spikes of soft orange-red flowers.

Cultural Commendation.

To Mr. A. Nash, gr. to J. C. Ramsden, Esq., J.P., Willinghurst, Shamley Green, Guildford, for a fine plant of *Vanda cærulea*, with two spikes bearing together twenty-five flowers.

Other Exhibits.

Messrs. Jas. Veitch & Sons showed *Lælia* × *Clarinda* (*L. Perrinii* ♀ × *L. pumila* ♂); and *Cattleya* × *Minucia* (*C. Loddigesii* ♀ × *C. Warscewiczii*).

C. L. N. Ingram, Esq. (gr. Mr. T. W. Bond), sent *Lælio-Cattleya* × ‘T.W.Bond’ (*C. labiata autumnalis* ♀ × *L. purpurata* ♂);

L.-C. × 'Firefly' (L. Dormaniana ♀ × C. Bowringiana ♂); and L.-C. × Andreana (C. bicolor ♀ × L. × elegans ♂).

T. W. Swinburne, Esq., Corndean Hall, Winchcombe, sent a good *Cypripedium Charlesworthii* and a malformed *C. insigne*.

J. Charlton Parr, Esq., Grappenhall Heyes, Warrington (gr. Mr. Masterton), sent *Cypripedium* × *polystigmaticum*.

G. Shirland Ball, Esq., Ashford, Wilmslow, Cheshire (gr. Mr. Hay), sent a fine flower of *Cypripedium insigne* Sanderæ.

Thos. Statter, Esq. (gr. Mr. R. Johnson), showed *Cattleya bicolor cærulea* and *Cattleya* × 'Prince of Wales.'

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), exhibited *Odontoglossum Uro Skinnerii* album with pure white labellum and greenish sepals and petals. The variety seems to be a hybrid, and a full account of its history is given in the *Orchid Review*, November 1896, p. 339.

ORCHID COMMITTEE, OCTOBER 27, 1896.

HARRY J. VEITCH, Esq., in the Chair, and sixteen members present.

Awards Recommended:—

Gold Medal.

To Messrs. Jas. Veitch & Sons, Chelsea, for a splendid group of Orchids in flower, in which rare species and hybrids were well represented.

Silver Flora Medal.

To R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), for an extensive group of Orchids in flower.

To Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), for a collection of varieties of *Dendrobium Phalaenopsis*, *Cattleya Dowiana aurea*, *Cypripediums*, &c.

Silver Banksian Medal.

To M. Georges Mantin, Château de Bel-Air, Olivet, France, for a group of six varieties of *Cattleya* × *Mantini* (*C. Bowringiana* ♀ × *C. Dowiana* ♂); *Lælio-Cattleya* × *Belaiensis* (*C.*

Bowringiana ♀ × *L. autumnalis* ♂), an extraordinary hybrid with a general resemblance to a large drooping-flowered *L. autumnalis*; *Lælio-Cattleya* × *Behrensiana*, and *L.-C.* × *B. inversa*, and *Cypripedium* × *Boncardii* (*C. superbiens* ♀ × *C. barbatum* ♂), a form of *C.* × *superciliare*.

Bronze Banksian Medal.

To H. J. Elwes, Esq., Colesborne, Andoversford, for an interesting collection of botanical Orchids, among which were *Cyenoche Loddigesii*, *Dendrobium Aphrodite*, *Habenaria Susannæ*, *H. decipiens*, *Pleione Wallichiana*, *P. lagenaria*, *Arundina chinensis*, *Saccolabium bigibbium*, *Acampe papillosa*, and a singular unknown *Cirrhopetalum*.

First-class Certificate.

To *Cattleya labiata* 'R. I. Measures' (votes, unanimous), from R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman). A pure white variety, with well-defined bright pink veining on the lip.

To *Cattleya* × 'Le Czar' (supposed natural hybrid *C. labiata* × *C. granulosa*) (votes, unanimous), from Messrs. Linden, Brussels. A near ally to *C.* × 'Victoria Regina,' but with larger flowers and a more pronounced isthmus connecting the posterior and anterior parts of the labellum.

Award of Merit.

To *Lælio-Cattleya* × 'Elvira' (*C. Trianae* ♀ *L.-C. Schilleriana* ♂) (votes, unanimous), from Messrs. Veitch, Chelsea. A very singular hybrid, with much of the form and thick texture of *L.-C. Schilleriana*, but larger and broader in all its parts.

To *Cypripedium* × 'Regina' (*C.* × *Leeanum* ♀ × *C. Fairieanum* ♂) (votes, unanimous), from Messrs. Veitch. A pretty flower with a general resemblance to *C.* × *Arthurianum*, but with the upper two-thirds of the dorsal sepal pure white, with purple lines at the base.

Cultural Commendation.

To M. Georges Mantin, Olivet, France, for *Cattleya* × *Mantinii nobilior*.

To Mr. W. Lane, gr. to Miss D. Smith, King's Ride, Ascot, for a splendid specimen of *Cattleya Bowringiana*, with fine large spikes of flowers.

Other Exhibits.

Messrs. Hugh Low & Co., Clapton, sent a group of *Cattleya labiata* and other Orchids.

Messrs. F. Sander & Co., St. Albans, exhibited a group of Orchids.

Messrs. B. S. Williams & Son, Holloway, sent a group of Orchids.

Sir Wm. Marriott, The Down House, Blandford (gr. Mr. Thos. Denny), showed *Cattleya* × 'La Belle' (*C. Warscewiczii* ♀ × *C. Harrisoniæ* ♂) and *Cypripedium* × *Marriottianum* (*C. Spicerianum* ♀ × *C. niveum* ♂).

Fred. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. T. Stafford), showed *Cattleya* × *Hardyana*, Wrigley's var., *C.* × *Massaiana* (*C. aurea marmorata*), *Pleione maculata alba*, and *Lælia pumila*.

Messrs. F. Sander & Co., St. Albans, showed *Phaius* × *Ashworthianus* (*P. Mannii* ♀ × *P. maculatus* ♂), with yellow flowers closely approaching those of *P. maculatus*, and having yellow spots on the leaves similar to that species. Also *Cattleya labiata* 'The Bride' and *C. l.* 'The Pearl,' both with white sepals and petals and coloured lip.

H. Shaw, Esq., Heathfield, Birch Vale, Derbyshire (gr. Mr. J. Cliffe), sent *Cattleya maxima* var.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), showed *Lælio-Cattleya* × *Callistoglossa Ingramii*, a very richly coloured variety.

Walter C. Clark, Esq., Sefton Park, Liverpool, showed *Cypripedium* × (*C. argus Moensii* ♀ × *C.* × *vexillarium* ♂).

S. G. Lutwyche, Esq., Beckenham (gr. Mr. Paterson), showed various *Cypripediums*, &c.

C. J. Crossfield, Esq., Liverpool, sent a fine form of *Cattleya labiata*.

ORCHID COMMITTEE, NOVEMBER 10, 1896.

HARRY J. VEITCH, Esq., in the Chair, and thirteen members present.

Awards Recommended :—*Silver Flora Medal.*

To Messrs. Jas. Veitch & Sons, Chelsea, for a remarkable group of hybrid Orchids, in which thirty-two distinct and showy kinds were staged.

Silver Banksian Medal.

To W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), for a group of Odontoglossums and Cattleyas.

To Messrs. F. Sander & Co., St. Albans, for an excellent group of Orchids.

First-class Certificate.

To Cattleya maxima alba (votes, unanimous), from Hamar Bass, Esq., Byrkley, Burton-on-Trent (gr. Mr. J. Hamilton). A fine pure white variety.

To Lælio-Cattleya \times Nysa superba (L. crispa \times C. Warscewiczii σ) (votes, 11 for, 1 against), from Messrs. Jas. Veitch & Sons, Chelsea. A fine hybrid, with a general resemblance to L.-C. \times Exoniensis, but an improvement on that variety.

Award of Merit.

To Cyrtopidium 'Fred Hardy' (votes, unanimous), from Fred Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. T. Stafford). This seemed to occupy to the species C. Charlesworthii the same position that C. Lawrenceanum Hyeum does to its type, viz. a variation in which nearly all colour but white and green is suppressed. Petals and lip yellowish green, upper sepal white with a faint lilac tinge at its base; staminode white with a yellow boss in the centre.

To Odontoglossum crispum 'Golden Queen' (votes, unanimous), from W. Thompson, Esq., Walton Grange, Stowe, Staffordshire (gr. Mr. W. Stevens). Flowers pale yellow spotted with brown.

Cultural Commendation.

To Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Staines, for a grand specimen of *Cymbidium Tracyanum*, with eighteen flowers on a spike, each flower six inches across.

To Mr. Hyslop, gardener to H. S. Leon, Esq., Bletchley Park, Bletchley, for a fine plant of *Lælia pumila* with eleven large flowers.

Other Exhibits.

Messrs. Hugh Low & Co., Clapton, showed a group of Orchids.

Mr. R. Gülzow, Bexley Heath, exhibited a group of *Dendrobium*, *Phalænopsis*, &c.

J. Hawthorn Kitson, Esq., Elmet Hall, Leeds (gr. Mr. T. Bonsall), sent a fine form of *Odontoglossum Uro-Skinnerii* and of *Cattleya Bowringiana*.

Messrs. Jas. Garaway & Co., Clifton, sent a curiously double form of *Cattleya labiata*.

G. W. Law-Schofield, Esq., New-Hall-Hey, near Manchester (gr. Mr. Shill), showed a fine pan of *Cœlogyne* (*Pleione*) *maculata alba*, with thirty flowers; also a number of coloured drawings of rare Orchids.

H. H. Bolton, Esq., Height Side, Newchurch, Manchester (gr. Mr. Eastwood), sent a large variety of *Cattleya labiata*.

H. Shaw, Esq., Heathfield, Birch Vale, Derbyshire (gr. Mr. Cliffe), showed a hybrid *Cypripedium* near to *C. × 'Euryale.'*

Messrs. F. Sander & Co., St. Albans, exhibited *Calanthe × albata* (*C. veratrifolia × Cooksonii*). A very singular hybrid with white flowers, and intermediate between the evergreen *Calanthe* and the deciduous section.

Frau Ida Brandt, Riesbach, Zürich, sent a very brightly coloured *Odontoglossum Kramerii* and *O. cristatellum*.

Col. Wilson, Hillside, Allerton, Liverpool (gr. Mr. T. Healey), sent *Cypripedium × (C. bellatulum ♀ × C. callosum ♂)*.

C. L. N. Ingram, Esq., Elstead House, Godalming, Surrey (gr. Mr. T. W. Bond), exhibited *Lælio-Cattleya × 'Meteor'* (*L. pumila Dayana ♀ × C. Bowringiana ♂*), *L.-C. × 'Homère'* (*L. Perrinii ♀ × C. Percivaliana ♂*), and *L.-C. × 'Minerve'* (*L. Perrinii ♀ × C. Lawrenceana ♂*).

ORCHID COMMITTEE, NOVEMBER 24, 1896.

HARRY J. VEITCH, Esq., in the Chair, and twenty-two members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. Jas. Veitch & Sons, Chelsea, for a remarkable



Fig. 22.—SOPHRO-CATTELEYA × 'CALYPSO.' (*Gardeners' Chronicle.*)

group of Orchids, principally home-raised hybrids, among which were set four different crosses of *Cypripedium Fairieanum*.

Silver Banksian Medal.

To Baron Schröder, The Dell, Staines (gr. Mr. H. Ballantine), for a collection of choice Orchids, including *Sophro-Cattleya* × 'Calypso' (fig. 22), *Odontoglossum Pescatorei* Schröderianum, *O.* × *Wilckeanum* Godefroyanum, &c.

To Messrs. F. Sander & Co., St. Albans, for a group of Orchids.

First-class Certificate.

To *Odontoglossum* × *Hallii-crispum* (*O. Hallii leucoglossum*

× *O. crispum Cooksonii*) (votes, 11 for, 5 against), from Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr. Mr. Wm. Murray). A remarkable hybrid, with creamy white flowers blotched with brown, and with the peculiar crest of *O. Hallii* in a marked degree.

To *Lælio-Cattleya* × *Decia alba* (votes, unanimous), from



Fig. 23.—*CYPRIPEDIUM* × 'BARON SCHRÖDER.' (*Journal of Horticulture*.)

Messrs. Jas. Veitch & Sons, Chelsea. A charming form with white sepals and petals; lip light lavender with an indescribably beautiful network of silvery white. This plant also won the medal for the best Orchid raised in England and not shown before 1896.

To *Cypripedium* × 'Baron Schröder' (*C.* × *œnanthum* super-

bum ♀ × C. Fairieanum ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons. This is the finest of the Fairieanum crosses which has yet appeared. Dorsal sepal white, with a green tinge at the base, and about fifteen dotted lines of purple radiating from it. The rest of the flower yellow with spotting and lines of chocolate colour. (Fig. 23.)

Award of Merit.

To Lælio-Cattleya × Tiresias (C. Bowringiana ♀ × L.-C. × elegans Turneri ♂) (votes, unanimous), from Messrs. Jas. Veitch & Sons. This in form and colour resembled in a great degree C. Bowringiana, but the flowers were larger and the lip less convolute than in that species.

To Lælio-Cattleya × Apollonia (? L. purpurata × C. Dowiana) (votes, 2 for, 7 against). This resembled L.-C. × 'Pallas.' Sepals and petals light rose colour; lip dark crimson purple. Flower very fragrant.

To Lælia × Juvenalis (L. Perrinii ♀ × L. pumila ♂) (votes, unanimous), from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White). A very beautiful flower resembling a very large L. pumila præstans.

To Sophro-Lælia × Marriottii (S. grandiflora ♀ × L. flava ♂) (votes, 12 for, 4 against), from Sir Wm. Marriott, Down House, Blandford. This singular hybrid resembles a strong-growing Sophronitis and bore a three-flowered inflorescence of orange-scarlet flowers, with the form of a narrow-petalled S. grandiflora, but with the narrow, crimped front lobe to the lip, as in L. flava.

To Lælio-Cattleya × Schilleriana, Ashworth's variety (votes, unanimous), from Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. Holbrook). A very large and finely coloured form.

To Cattleya labiata, Ashford variety (votes, unanimous), from G. Shirland Ball, Esq., Ashford, Wilmslow, Cheshire (gr. Mr. A. Hay). A very dark and brightly-coloured variety.

Botanical Certificate.

To Acanthephippium javanicum, from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin.

Cultural Commendation.

To Mr. Hughes, gr. to E. H. Woodall, Esq., St. Nicholas

House, Scarborough, for a grand specimen of *Vanda cærulea* with seven growths and five magnificent spikes of flowers.

Other Exhibits.

Frau Ida Brandt, Riesbach, Zürich (gr. Mr. Schlecht), sent flowers of *Oncidium Forbesii*, *Odontoglossum Insleayii splendens*, *Brassavola cuspidata*, *Vanda cærulea*, &c.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), showed *Odontoglossum* \times *elegantius* and a number of coloured drawings of Orchids.

W. Bryant, Esq., Stoke Park, Slough (gr. Mr. Kemp), showed a very fine form of *Cattleya labiata*.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howes), sent the yellow *Cypripedium insigne* *Sanderianum* and *Siparis longipes*.

Admiral Cator, Hazelwood, King's Langley (gr. Mr. G. Day), exhibited *Cymbidium cyperifolium*.

Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), showed varieties of *Cypripedium insigne*, &c.

Walter C. Clark, Esq., Sefton Park, Liverpool, sent *Cypripedium* \times *polychromium* (*C.* \times *politum* ♀ \times *C. superbiens* ♂).

H. Worthington, Esq., Abbey Lawn, Whalley Range, Manchester, sent *Catasetum* \times *splendens* *Worthingtonianum*; white with purple base to the labellum, and purple spotted sepals and petals.

Norman C. Cookson, Esq. (gr. Mr. Wm. Murray), showed *Cypripedium* \times *Chapmanii* (*C. Curtisii* ♀ \times *C. bellatulum* ♂).

Miss Boberts, Loughborough Road, Brixton, sent a collection of coloured drawings of Orchids.

Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), showed *Sobralia Lindenii*. Flowers white with purple veining on the labellum.

G. Shirland Ball, Esq. (gr. Mr. A. Hay), showed *Cattleya labiata alba*.

R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. J. Chapman), showed *Cypripedium* \times 'Regina' (*C.* \times *Leeanum* ♀ \times *C. Fairieanum* ♂); *C.* \times *Edwardii* (*C. superbiens* \times *C. Fairieanum*); *C.* \times *Olenus* (*C. bellatulum* \times *C. ciliolare*); and *Lælio-Cattleya* \times *Sallierii* (*L. purpurata* \times *C. Loddigesii*).

ORCHID COMMITTEE, DECEMBER 15, 1897.

HARRY J. VEITCH, Esq., in the Chair, and twenty-one members present.

Awards Recommended :—*Gold Medal.*

To Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a magnificent group of Orchids, composed in part of the handsome Burford hybrid *Calanthes*, and part of rare and interesting species of other classes.

Silver Flora Medal.

To J. T. Bennett Poë, Esq., Holmwood, Cheshunt (gr. Mr. Downes), for a very fine group of Orchids, in which *Zygopetalum Mackaii* and other showy species were well represented.

To Messrs. Jas. Veitch & Sons, Chelsea, S.W., for an excellent group of Orchids, principally home-raised hybrids.

First-class Certificate.

To *Lælio-Cattleya* × *Rosalind* (*C. Trianae* ♀ × *L. C. Dominii* ♂) (votes, unanimous), from Messrs. J. Veitch & Sons. One of the finest hybrids of the year. Flowers equal in size to a good *C. Trianae*. Sepals and petals white; the latter flushed with rose-pink, except on the margin. Lip yellow at the base, with white veining running into the rich crimson-purple colour of the front lobe.

To *Lælia pumila alba*, var. 'E. Ashworth' (votes, unanimous), from E. Ashworth, Esq., Wilmslow, Cheshire. The first true albino of the species, that previously shown as *L. præstans alba* being white with purple marking on the lip.

Botanical Certificate.

To *Bulbophyllum auricomum*, from Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White).

To *Platyclinis uncata*, from Sir Trevor Lawrence, Bart.

To *Brassavola*, from Sir Trevor Lawrence, Bart.

Cultural Commendation.

To Mr. W. H. White, gr. to Sir Trevor Lawrence, Bart., Burford, Dorking, for a large specimen of *Maxillaria lepidota* with about 100 flowers.

Other Exhibits.

Baron Schröder, The Dell, Staines (gr. Mr. H. Ballantine), exhibited a collection of cut spikes of rare Orchids, among which were *Odontoglossum crispum Schröderiana* and a number of the best varieties of *Lælia anceps*.

Messrs. F. Sander & Co., St. Albans, exhibited a good group of Orchids.

Messrs. Hugh Low & Co., Clapton, showed an interesting group of Orchids.

Major Joicey, Sunningdale Park, Sunningdale (gr. Mr. Fred. J. Thorne), sent two finely-flowered examples of *Dendrobium Johnsoniæ*.

Major Mason, The Firs, Warwick, showed *Cypripedium insigne giganteum*, which is the largest of its kind yet shown.

Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, also showed the same variety, which, it was stated, had been previously exhibited as the Harefield Hall variety.

G. Shirland Ball, Esq., Ashford, Wilmslow, Cheshire (gr. Mr. A. Hey), sent *Cypripedium* × *Leeanum magnificum* and *C.* × *Swinburnei magnificum*.

Messrs. Heath & Son, Cheltenham, sent a spike of *Zygopetalum*, said to be from *Z. Mackaii* × *Odontoglossum* sp., but which differed but slightly from some forms of *Z. Mackaii*. The labellum, however, was almost wholly white, with but few purple spots, and its wavy edge and some other minor details seemed to indicate that a cross had been effected.

J. W. Temple, Esq., Leyswood, Groombridge (gr. Mr. E. Bristow), staged a fine example of *Lælia anceps Amesiana*.

F. C. Jacomb, Esq., Cheam Park, Cheam (gr. Mr. Turner), showed *Odontoglossum* × *Andersonianum leucochilum*, in which the lip was entirely of a cream-white colour.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), sent *Cypripedium* × *Lucianianum superbum*, *C.* × *Annamense*, and *C.* × *Robertii*.

S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. T. Paterson), staged a small collection of hybrid *Cypripediums*.

H. B. Boardman, Esq., Thorn Leigh, Burton, Westmoreland, sent *Cattleya labiata* and hybrid *Cypripediums*.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), staged a small group of Orchids,

Herr Otto Froebel, Zürich, sent *Cymbidium giganteum*,
Odontoglossum × *Coradinei*, and *Cypripedium* × *Leeanum* var.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin,
 Dublin, sent flowers of *Maxillaria setigera*.

SPECIAL PRIZES FOR NEW PLANTS, 1896.

With the hope and object of encouraging individual effort and original research the Council in 1896 offered twelve medals—six for Introduced Plants and six for plants of Home Production.

Owing to insufficiency of competition (in several of the classes there were absolutely no entries, and in others only one or two at most) the judges appointed to deal with these classes were only able to award the medal in one class, as below:—

Class M.—The best Orchid raised in this country not previously shown at any of the Society's meetings.

OPEN.

Silver-gilt Banksian Medal.

To Messrs. James Veitch & Sons, Chelsea, for *Lælio-Cattleya* × *Decia alba*. See p. ccxvii.

DONORS OF PLANTS, SEEDS, &c., TO THE SOCIETY'S GARDENS AT CHISWICK DURING THE YEAR 1896.

ADCOCK, G. H., St. Geelong. Flower seeds.

ARKWRIGHT, J. H., Hampton Court, Leominster. Primroses and Fern spores.

BARR & SONS, Covent Garden. Vegetable and flower seeds.

BATCHELOR, W., Harefield Park, Uxbridge. Alyssums and Dahlias.

BECKETT, E., Aldenham House, Elstree. Calla Little Gem.

BEDDOME, Colonel, Sispara, West Hill, Putney. *Amaryllis*, *Billbergia nutans*, &c.

BENARY, E., Erfurt. Vegetable seeds.

BINGHAM, W., Holy Moon Side, Chesterfield. Seed Potatoes.

BRISCOE-IRONSIDE, H., Burgess Hill, Sussex. Chrysanthemum seed.

BROWN, E. G., Stamford Road, Fulham. Ricinus seeds.

BROWNING-HALL, Miss, Algiers. Flower seeds, &c.

BUNYARD & Co., G., Maidstone. Fruit trees, &c.

BURBIDGE, F. W., Trinity College, Dublin. Seeds of *Cordyline indivisa*.

CAMPBELL, C. LEE, Glewston Court, Ross. Tomato seed and fruit-tree scions.

- CARTER & Co., J., High Holborn. Vegetable and flower seeds.
 CHILD, W., Croome Court, Severn Stoke, Worcester. *Dracaena nigro rubra* and *Nephrolepis Duffii*.
 COCKER & SONS, J., Aberdeen. *Violas*.
 COOPER, W., Sunninghill, Ascot. *Trebbiano* Grape cuttings.
 COURTAULD, S., Bocking Place, Braintree. *Orchids* and *Ferns*.
 CREWDSON, W., The Barons, Reigate. *Orange-tree* scions.
 CROWLEY, PHILIP, Waddon House, Croydon. *Dracenas*, *Anthuriums*, &c.
 CUTHBERTSON, M., Rothesay. *Violas*.
 DALE, A., Harrowgate. *Tomato* seed.
 DAMMANN & Co., San Giovanni, Naples. *Vegetable* seeds.
 DEAN, Rev. E., Abinger Hammer, Dorking. *Violas*.
 DIRECTOR, Botanic Gardens, Edinburgh. *Flower* seeds.
 DIRECTOR, Royal Gardens, Kew. Collection of plants and seeds.
 DOBBIE & Co., Rothesay. *Vegetable* and *flower* seeds, &c.
 DOD, The Rev. C. WOLLEY, Edge Hall, Malpas. *Poppy* seed.
 DOUGLAS, JAMES, Great Bookham. *Carnation*, *Picotee*, and *Polyanthus* seed.
 EDGAR, J. S., Rockhampton, Queensland. *Grevillea Banksii*.
 ELWELL BROS., Enfield. *Tomato* seed.
 FARR, W., Spring Grove, Isleworth. *Crotons*, *fruit-tree* scions, and *Tomato* seed.
 FAWCETT, W., Public Gardens, Jamaica. *Fern* spores.
 FINCHAM, HENRY, Cranbrook, Kent. *Tomato* seed.
 FLOYER, Mrs., Hermit's Hill, Burghfield, Mortimer R.S.O., Reading. *Aristolochia* seeds.
 FORBES, JOHN, Hawick. Collection of *Violas* and *Phloxes*.
 FOSTER & Co., Filmer Road, Fulham. *Phosphamo* manure.
 FRASER, J. H., Scott's Street, Annan. *Strawberry* plants.
 FRASER, J., South Woodford. *Bouvardias*, *Cyclamen*, and *fruit trees*.
 GIBSON, A., Cheddar, Weston-super-Mare. *Seed Potatos*.
 GREEN, JOHN, Dereham. *New Dahlia*.
 GUILDFORD HARDY PLANT NURSERY, Millmead, Guildford. *Tritoma caulescens*.
 HAGGART, A., Moor Park, Ludlow. *Chrysanthemum* cuttings.
 HARRISON & SONS, Leicester. *Vegetable* seeds.
 HAWKES, J., Osterley Park Gardens, Isleworth. *Cyclamen* seed, &c.
 HAYWOOD, T. B., Reigate. *Chrysanthemum* cuttings.
 HEINEMANN, F., Erfurt. *Vegetable* and *flower* seeds.
 HEYWORTH, Colonel, Wittenham, Ashford. *Apple-tree* *Crimson King*.
 HOGGIN, PRESTLY, Enys, Penryn, Cornwall. *Seeds of Magnolia Lennei*.
 HOLMES, W. G., Tain. *Vegetable* seeds.
 HUDSON, J., Gunnersbury House Gardens, Acton. *Asparagus deflexus*.
 HURST & SONS, Hounsditch. *Vegetable* seeds.
 HUTTON, A. W., Oxford Road, Chiswick. *Flower* seeds.
 JOHNSON & SONS, W. W., Boston. *Vegetable* seeds.
 LAMB, J., Burton Joyce, Notts. *Pink Albino*.
 LANDRETH'S SEED ESTABLISHMENT, Bristol, Penna, U.S.A. *Tomato* seed.
 LAWRENCE, Sir TREVOR, Bart., Burford, Dorking. *Calla Elliottiana* and *flower* seeds.
 LAXTON BROS., Bedford. *Strawberry* plants and *vegetable* seeds.
 LEE & SON, C., Ealing. Collection of *Peach* and *Nectarine* trees.
 LEMOINE, M. V., Nancy. Collection of *Pelargoniums*.
 LETELLIER & FILS, Caen, Calvados, France. *Strawberry* plants.
 LIDSTONE, W. A., Slough. *Seed Potatos*.
 LLEWELYN, Sir JOHN T. D., Bart., Penllergaer, Swansea. *Rhododendron* and *Azalea* seeds.
 MAIDEN, J. H., Technological Museum, Sydney. *Livistona australis* (seeds).

- MARSH, T., Warwick. Seed Potatos.
- MARSHALL, W., Bexley. Montbretias, &c.
- MARVIN, F. W., Raglan House, Hereford. Chrysanthemum cuttings.
- MASTERS, Dr., Ealing. Flower seeds, &c.
- MCCLURE, T., Hartley Grange, Winchfield, Hants. Vegetable seeds.
- MCDONALD, Miss, Chichester. Onion seed.
- MOLYNEUX, E., Swanmore Park, Bishops Waltham. Chrysanthemum cuttings.
- MORGAN, HUNGERFORD, Priory Park Road, Kew. Delphinium seed.
- MÜLLER, The late Baron Sir F. von, Melbourne. Flower seeds.
- NIELD, Mr., Holmes Chapel, Cheshire. Tomato seed.
- NUTTING & SONS, 106 Southwark Street, S.E. Vegetable seeds.
- OAKES, H. P., Nowton Court, Bury St. Edmunds. Bulbs.
- ORCHARD, C., Bembridge Harbour Gardens, I.W. Peas.
- PAUL & SON, Cheshunt. Fruit trees.
- PEARSON & SON, Chilwell, Notts. Fruit trees.
- POLLETT, H. M., Bickley, Kent. Peas.
- POWELL, T., Barberton, S. Africa. Orchids.
- PRYCE, MORGAN, Elsham Hall Gardens, Lincoln. Seed Potatos.
- RIVERS & SON, T., Sawbridgeworth. Fruit trees.
- ROSS, C., Welford Park, Newbury. Seed Potatos.
- SAVAGE & WALKER, Quebec Road, Norwich. Manure "Vitaline."
- SIBBALD, T., Bishop Auckland. Violas.
- SIM, G. E., 85 Guildford Street, W.C. Cypress Vine seed.
- SMITH & Co., R., Worcester. Fruit-tree scions.
- SMITH & SIMONS, Buchanan Street, Glasgow. Seed Potatos.
- STOKES, W. J., Hilperton Marsh, Trowbridge. Peas.
- SUTTON & SONS, Reading. Vegetable seeds.
- SYDENHAM, R., Tenby Street, Birmingham. Broccoli seed.
- THOMAS, OWEN, Royal Gardens, Windsor. Fruit-tree scions.
- THOMPSON, W., Ipswich. Flower seeds.
- THORNE, Mr., Sunningdale Park, Sunningdale. Cyclamen.
- TOOGOOD & SONS, Southampton. Tomato and Vegetable Marrow seeds.
- VEITCH & SONS, J., Chelsea. Vegetable seeds, fruit trees, and other plants.
- VEITCH & SON, R., Exeter. Vegetable seeds.
- VILMORIN & Co., Paris. Cannas, vegetable and flower seeds.
- WALLACE & Co., R., Colchester. Erythroniums.
- WARD, A., Stoke Edith, Hereford. Seed Potatos, &c.
- WARD, H. W., Longford Castle Gardens, Salisbury. Peas.
- WARD, Mrs., Sutton Court Road, Chiswick. Vegetable Marrow seeds.
- WATKINS, J., Hereford. Fruit-tree scions.
- WATKINS & SIMPSON, Exeter Street, Strand. Vegetable seeds.
- WILES, E. S., The Rookery, Down, Farnborough, Kent. Seed Potatos.
- WILKS, Rev. W., Shirley, Croydon. Crinums and flower seeds.
- WITH'S CHEMICAL Co., The Barton, Hereford. Liquid manure compound.
- WYTHES, G., Syon House Gardens, Brentford. Dracenas, vegetable seeds, &c.
- YATES, G. & W., Cheltenham. Vegetable seeds.
- YOUNG & DOBINSON, Stevenage. Tomato seed, Chrysanthemum and Coleus cuttings.

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